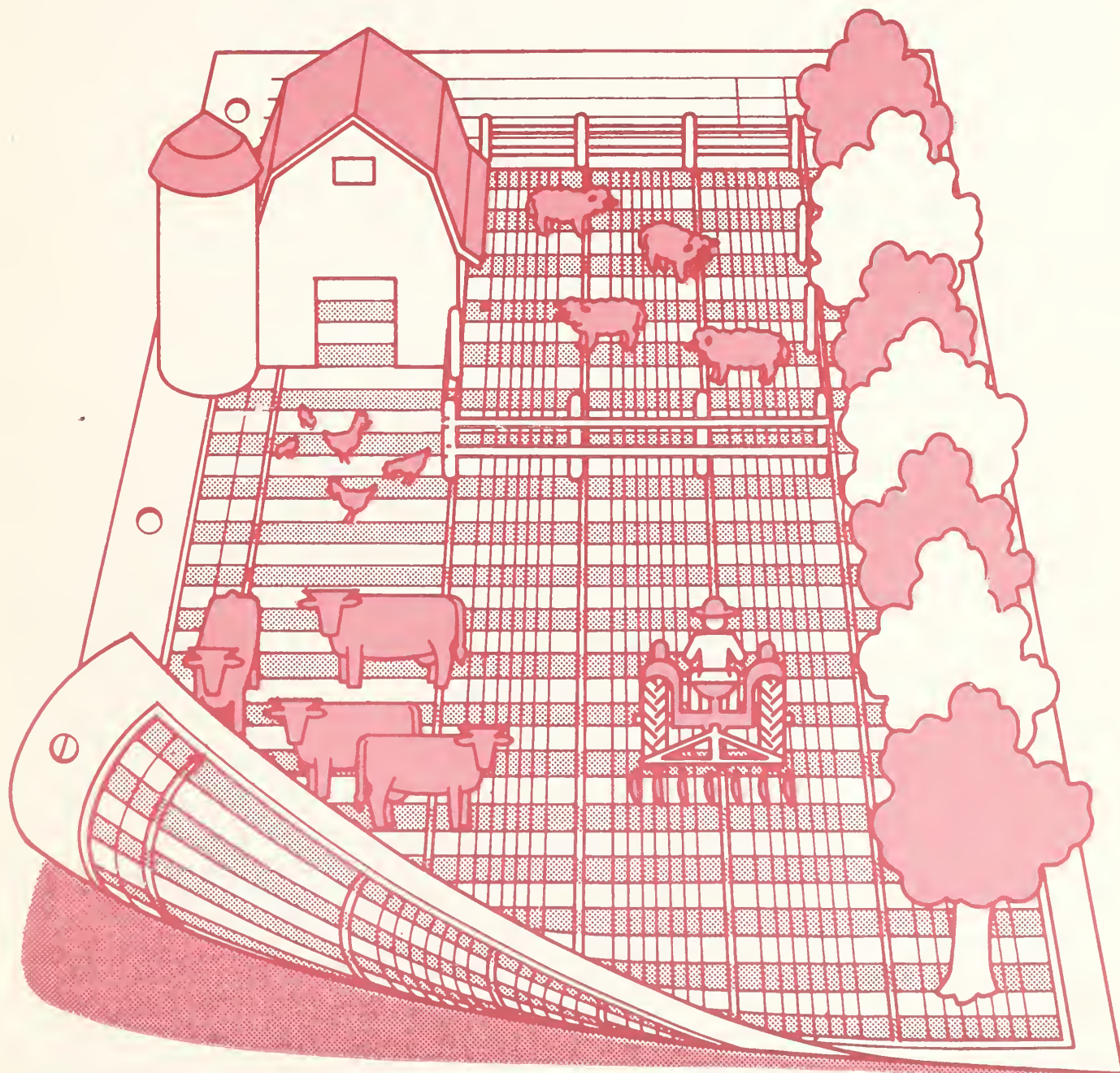


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Costs of Production Major Field Crops, 1988



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Abstract

Costs of producing most major field crops increased in 1988. Per-acre costs rose slightly while per-bushel production costs climbed sharply for barley, corn, oats, sorghum, soybeans, and wheat because of drought-reduced yields. Despite increased costs, per-acre returns for most crops improved. Higher prices offset lower yields for soybeans, sunflowers, and the major grains except barley.

Keywords: Costs of production, crop costs and returns.

Preface

Costs of Production--Major Field Crops is one of five reports in the annual *Economic Indicators of the Farm Sector* series. Others are the *National Financial Summary*, *State Financial Summary*, *Costs of Production--Livestock and Dairy*, and *Production and Efficiency Statistics*.

This report incorporates data from specialized versions of the 1987 and 1988 Farm Costs and Returns Surveys. The 1987 and 1988 FCRS data have been used to revise the 1986 and 1987 estimates and to produce the 1988 estimates for barley, corn, cotton, peanuts, and rice. The 1988 FCRS data on sugar beets and sugarcane (Texas and Louisiana only) have been incorporated into the 1988 estimates for these crops only. Production regions have been redefined for corn and barley because of changes in the number of farmers sampled in different States. ERS has changed methods of estimating fertilizer, fuel, repair, and labor expenses for sugar beets and sugarcane beginning with 1988. ERS has also changed methods of estimating labor and some fixed costs for barley, corn, cotton, peanuts, and rice beginning with 1986.

Beginning this year, dairy and livestock cost-of-production estimates are published separately in *Economic Indicators of the Farm Sector: Costs of Production--Livestock and Dairy, 1988* (ECIFS 8-3).

The Agriculture and Consumer Protection Act of 1973 mandated that the Secretary of Agriculture establish a program of annual estimates of the costs of producing wheat, feed grains, cotton, and dairy commodities. Subsequent legislation called for the use of cost-of-production estimates for rice, peanuts, sugar crops, and tobacco. Responsibility for preparing the estimates has been delegated to the Department of Agriculture's Economic Research Service (ERS).

Costs of Production--Major Field Crops is prepared principally by the staff of the Farm Costs and Returns Section, Farm Sector Financial Analysis Branch, Economic Research Service, U.S. Department of Agriculture. The major contributors to this report are Mary Ahearn, Mir Ali, Robert Dismukes, Ken Mathews, Bill McBride, Bob Pelly, Mike Salassi, and Annette Clauson. Other contributors are Carrie Davis, Dargan Glaze, Hisham El-Osta, and Cheryl Johnson. The managing editor of this publication is Jim Carlin, (202) 786-1512.

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Economic Indicators of the Farm Sector

Costs of Production-- Major Field Crops, 1988

1988 Production Costs and Returns

This report presents estimates of the costs and returns of producing major field crops. Tables 1-59 present detailed U.S. and regional estimates for 1986-88 on a per-acre basis. Tables 60-70 show summary cost estimates for the United States and regions for the same 3-year period on a per-unit-of-output basis. Tables 71-83 present summary per-acre estimates for the United States for each year since the ERS series began in 1975.

The estimates are based on weighted-average estimates of all costs, whether paid by farm operators or landlords, associated with a particular enterprise. *Payments for and costs of participation in Government programs are not included except as discussed later.*

Costs of producing most major field crops increased in 1988. Variable cash expenses per planted acre were higher for all crops except cotton, flaxseed, and sunflowers. Variable cash expenses rose about 5 percent per acre for corn, barley, oats, wheat, and soybeans. Rice variable cash expenses climbed 4 percent per acre. Grain sorghum rose 2 percent, and peanuts increased 1 percent. Total cash expenses also increased, but less than variable cash expenses, as fixed cash interest expenses declined. Total economic costs per acre rose as returns allocated to land increased.

Producers generally paid higher prices for inputs in 1988. The Index of Prices Paid for Production Items, Interest, Taxes and Wage Rates (*Agricultural Prices, 1988 Summary*) increased 6 percent between 1987 and 1988. The index of fertilizer prices rose the most, 10 percent, followed by machinery prices and wage rates. The price indexes of agricultural chemicals and fuels

and energy increased by less than 2 percent. The index of interest payments fell by about 2 percent (see app. table 1).

Despite increased costs and lower yields, due primarily to drought, production returns for most crops improved. Higher prices offset lower yields for soybeans, sunflowers, and all major grains except barley. While corn yield fell by about 30 percent, the value of production per acre of corn was up 16 percent, as the harvest-month price of corn rose from \$1.57 per bushel in 1987 to \$2.60. Net cash returns to corn production were \$54 per acre compared with \$28 in 1987. Oats yield declined by about 30 percent and the price of oats more than doubled. The per-acre value of oats production increased by 30 percent. Net cash returns to oats production improved from \$18 per acre in 1987 to \$43. Soybean cash returns climbed from \$77 per acre to \$100. Cash returns to wheat production rose from \$10 per planted acre to \$28. Gross value of production per acre of sorghum was up more than 50 percent, and net cash returns improved from \$14 to \$89. Longer term residual returns to management and risk for these crops showed similar improvement in 1988.

Returns to barley, flaxseed, and cotton production fell slightly. Barley yield dropped by more than 40 percent, flaxseed yield by more than 60 percent. The gross value of production per acre of cotton declined 28 percent as both the price of cotton and its yield fell.

Lower yields led to dramatically higher costs per unit of output in 1988. Total economic costs per bushel of corn rose from \$2.05 in 1986 and \$2.06 in 1987 to \$3.16 in 1988. Total economic costs per bushel of wheat jumped from \$3.61 in 1987 to \$4.59 in 1988.

Barley--Production costs per acre increased slightly while costs per bushel increased dramatically because

of the 1988 drought in the Northern Plains. Total variable cash expenses per planted acre rose 4 percent to \$52, despite reduced expenses for fuel, repairs, and custom operations related to harvesting. Variable cash expenses per bushel jumped from \$1.06 in 1987 to \$1.88. Production returns changed little. The small increases in costs per acre were nearly offset by an increase in gross value of production per acre: U.S. yield fell 40 percent to 28 bushels per planted acre while the harvest-month market price rose 70 percent to \$2.88 per bushel.

Costs per acre continued to be lowest in the Northern Plains, the region with the most production. Costs per bushel in the Northern Plains, however, jumped in 1988 as yield fell from 43 bushels per planted acre in 1987 to just 17 in 1988. Total cash expenses per bushel more than doubled to \$3.68. Residual returns to management and risk in the Northern Plains fell \$10 per acre to minus \$60. In the Northwest, the region with the secondmost production, returns improved as a 25-percent increase in price offset lower yield and slightly higher per-acre production costs. In the Northeast, where a relatively small amount of barley is grown, returns to production improved dramatically in 1988 as the per-acre value of production, which includes both barley and straw, rose by more than 50 percent.

Corn--Production costs rose in 1988. Variable cash expenses climbed \$5 to \$122 per acre; total economic costs rose \$18 to \$263 per acre. Production fell as a result of the drought. Yield per planted acre was down 30 percent to 83 bushels per acre planted for grain. Total cash costs per bushel climbed from \$1.33 to \$1.96. Production returns per acre improved as the harvest-month price rose.

The 1988 drought hit production hardest in the Lake States and Corn Belt where yield was nearly 40 percent below the 1986 and 1987 levels. While cash costs climbed 2 percent per acre, cash costs per bushel jumped from \$1.37 in 1986 and \$1.31 in 1987 to \$2.29. Net cash returns per acre of production, however, changed little as the harvest-month price rose from \$1.53 to \$2.55. Yield was also down in the Great Plains, Northeast, and Southeast. Cash costs of production per acre increased from 3 to 6 percent in these regions while costs per bushel rose from \$1.23 to \$1.38 in the Great Plains, from \$1.81 to \$2.17 in the Southeast, and from \$1.66 to \$2.20 in the Northeast.

Cotton--Returns to production fell in 1988 as both yield and price decreased dramatically. Gross value of production per planted acre, including the value of

cottonseed but excluding direct Government payments, fell by more than \$100 to \$381. Cash costs per acre fell slightly. While expenses for fertilizer, chemicals, and fuel increased, total variable cash expenses were down about \$1 per acre as ginning expenses fell because of lower yield.

Costs per acre continued to be highest in the Southwest where cotton is irrigated. In addition to expenses for irrigation water, expenses for fertilizer, chemicals, fuel, and ginning in the Southwest were well above the U.S. average. The high costs in the Southwest, however, were offset by high yields and prices. Returns per acre of production were most favorable in the Southwest.

Flaxseed and sunflowers--Produced in North Dakota, South Dakota, and Minnesota, these crops too suffered from the 1988 drought. Flaxseed yield per planted acre fell by more than 60 percent from 1986 and 1987 levels and cash costs per bushel more than doubled to \$7.40. Sunflower yield fell by more than 35 percent and cash costs per hundredweight (cwt) increased by about 60 percent to \$8.39. Cash costs per acre of both crops declined, however, as harvest-related costs were not incurred. Higher flaxseed and sunflower prices led to improved net cash returns per acre of each crop.

Oats--Production costs per acre increased slightly in 1988 while drought caused yield to fall. Cash costs per bushel jumped from \$1.40 in 1987, when yield was 54 bushels per acre, to \$2.24 in 1988, when yield was 35 bushels per acre. The decrease in yield was greatest in the Northern Plains and the Lake States and Corn Belt, falling by 40 percent in the Northern Plains and 30 percent in the Lake States and Corn Belt.

Peanuts--Production costs per acre were up slightly in 1988. Higher yields, particularly in the Southeast and the Virginia-North Carolina region caused costs per pound to fall. Seeds and chemicals continued to be the major cash expenses in production, accounting for about half of total variable cash expenses.

Rice--Production costs rose in 1988. Cash expenses per acre, led by fertilizer, increased about \$11 to \$296. Cash returns to production improved greatly, from minus \$80 per acre in 1987 to plus \$17, as the harvest-month market price of rice rose by more than \$2 per cwt. Total economic costs per acre increased by \$41 as the return allocated to land, which is linked to yield and the price, increased by \$24 per acre. Costs per cwt continued to be highest in the Gulf Coast and lowest in Arkansas (non-Delta).

Grain sorghum--Returns per acre improved in 1988 despite a drop in yield. The harvest-month price of sorghum increased by \$1 per bushel and net cash returns increased from \$14 per acre in 1987 to \$60. Costs per bushel rose because of increased costs per acre and a fall in yield. In the Central Plains, yield fell from 73 to 63 bushels per acre and cash costs per bushel rose from \$1.12 to \$1.39. In the Southern Plains, where yield fell only about a bushel per acre, cash costs per bushel increased from \$1.37 to \$1.51.

Soybeans--Returns to production were up greatly in 1988 as the harvest-month price of soybeans rose from \$5.07 per bushel in 1987 to \$7.53. Net cash returns at the U.S. level increased \$23 to \$100 per planted acre despite a drop in yield from 34 bushels per acre to 27. Delta and Southeast yields increased and net cash returns doubled. In the North-Central region, where yield fell from 38 bushels per acre in 1987 to 27 in 1988, cash costs per bushel increased from \$2.64 in 1987, the lowest among the soybean regions, to \$3.83.

Sugar beets--Production costs were estimated from different survey data and by different procedures than in previous years. The 1986 and 1987 estimates in this report were updated from the 1984 Farm Costs and Returns Survey (FCRS) of sugar-beet growers. The 1988 estimates were based on the 1988 FCRS of growers. Procedures for estimating fertilizer, fuel, repairs, and hired labor were also changed with the 1988 estimates. Noncash benefits paid to workers and freight and dirt hauling charges and allowances were included in the 1988 estimates for the first time.

Residual returns to management and risk were \$53 per acre, or \$2.78 per net ton. Returns ranged from minus \$46 per acre in California to plus \$152 per acre in Montana, northwestern Wyoming, and northwestern North Dakota. Below-normal yields in Michigan, Ohio, western Idaho, Oregon, and California resulted in negative residual returns to management and risk.

Per-acre gross value of production for the 1988 sugar-beet crop ranged from \$588 in Michigan and Ohio to \$1,162 in western Idaho and Oregon. Drought conditions in the nonirrigated regions lowered yields to 16.4 net tons in Michigan and Ohio and 14.2 net tons in Minnesota and eastern North Dakota. Sugar content was also down for most beets grown in these regions. Continued disease problems in California lowered its average yield for the 1988 crop, including overwintered beets, which generally average higher yields, to 25 net tons. The season-average price

received by growers was generally higher in 1988 due to tightened sugar supplies.

Cash expenses were \$527 per acre or \$28 per net ton. They ranged from \$378 per acre in Minnesota and eastern North Dakota to \$785 in California. On a net ton basis, Colorado, Nebraska, and southeastern Wyoming had the lowest cash expenses and California had the highest.

Total economic costs were \$735 per acre, about \$38 per net ton. They ranged from \$558 per acre in Minnesota and eastern North Dakota to \$1,117 in western Idaho and Oregon. Total costs per net ton were lowest for Michigan and Ohio growers, averaging almost \$36, and highest for western Idaho and Oregon growers, about \$41.

Sugarcane--Production costs were based on more than one survey. The 1986 and 1987 estimates for Louisiana and Texas were updated from the 1984 FCRS and the 1988 estimates for these two States were based on the 1988 FCRS. The 1986 estimates for Florida and Hawaii come from direct accounting surveys undertaken in 1985 and 1986, the 1987 and 1988 estimates for Florida and Hawaii from a 1989 direct accounting survey.

The residual returns to management and risk for U.S. sugarcane production, excluding Hawaii, were \$37 per harvested acre or \$1.26 per net ton. Hawaii was excluded because of the lack of data on the gross value of production. Gross value of production ranged from \$663 per acre in Louisiana to \$1,030 per acre in Florida. Prices were generally higher because of tightened sugar supplies. Yields were lower in Florida and Hawaii and slightly higher in Louisiana and Texas.

Cash expenses, excluding Hawaii, were \$596 per acre or \$20 per net ton. Cash expenses ranged from \$342 per acre in Louisiana, the only nonirrigated State, to \$2,320 in Hawaii. Per-acre comparisons with Hawaii are difficult because sugarcane production costs there differ from other sugarcane-producing States. Hawaii harvests the crop on a 24- to 30-month cycle and has higher per-acre production costs and yields. Costs are more readily comparable across States on a net ton basis. Louisiana growers had the lowest cash costs per net ton, \$14, while growers in Hawaii had the highest cash costs, \$26 per net ton. Hired labor accounted for about 48 percent of total variable costs.

Total economic costs, excluding Hawaii, were \$833 per acre or \$29 per net ton. Per-acre economic costs

ranged from \$563 in Louisiana to \$2,822 in Hawaii. Economic costs per net ton ranged from \$22 in Louisiana to about \$32 in Florida.

Wheat--Production costs per acre increased slightly in 1988. Low yields in the Northern and Central Plains increased costs per bushel greatly. At the national level, cash costs per bushel of wheat rose from \$2.15 in 1987 to \$2.60. In the Northern Plains, where the drought reduced yield from 31 bushels per planted acre in 1987 to 13 bushels, cash costs rose from \$1.98 to \$4.18 per bushel. Yield in the Central Plains fell from 34 bushels to 31 bushels and cash costs per bushel rose from \$1.87 to \$2.15.

Returns per acre of wheat improved nationally as the harvest-month price of wheat rose from \$2.39 in 1987 to \$3.50. Returns per acre fell in the Northern Plains but climbed in all other regions. Wheat yield in both the Southeast and Northeast rose by about 10 bushels per acre, while the harvest-month price of wheat increased by about \$1 per bushel. The value of wheat straw also contributed to an increase in the gross value of production per acre of wheat in the Northeast.

Definitions and Structure of the Accounts

ERS presents production costs and returns in the form of a commodity account, listing gross value of production, variable cash expenses, fixed cash expenses, capital replacement, allocated returns to owned inputs (or opportunity costs), and three measures of residual returns. The accounts are often referred to as commodity, or enterprise, budgets. The ERS estimates are not really budgets or projections but historical estimates. They are based on actual levels of input use, yields, and prices as measured by farmer surveys.

Five characteristics underlie ERS estimates of crop costs and returns and affect ERS accounting. These characteristics relate to the treatment of participation in Government programs, the combined operation-landlord, the per-acre accounting, the treatment of multi-output and joint production, and the separation of production and marketing costs.

Government programs. ERS estimates exclude the direct effects of Government programs where possible so that policymakers may be informed as to production costs and returns in the absence of programs. Exclusion of all effects of Government programs, however, is not possible (see "Government Programs and Production Costs and Returns").

Combined operation-landlord costs and returns. ERS estimates of costs and returns cover the farm operation and landlord combined, as if they were one business. This means that each line item, for example fertilizer expense, is tallied for both the farm operation and landlord. The combined operation-landlord account also means that ERS estimates of cash expenses do not include cash and share rent paid by the farm operation to the landlord. What is a rental expense to the farm business is offset as income to the landlord. ERS estimates of economic costs are designed to account for the value of all inputs in production, including those that are owned. ERS calculates, therefore, an imputed cost for all land, whether owned, rented, or financed, in a consistent manner. (For more information on land charges, see "Economic (Full-Ownership) Costs" and "Why We Value Land the Way We Do"). ERS estimates of cash expenses include an interest expense, however, because interest is generally paid to those other than the combined operation-landlord entity.

Per-acre accounting. ERS cost and returns estimates (except sugarcane) are provided on a per-planted-acre basis. A planted acre is a unit that is comparable, and in some cases substitutable, among crops. Per-acre estimates are preferred for making comparisons across crops because yields differ across commodities and not all commodities are measured in the same units of output, for example, bushels or pounds. Tables 60-72 show cost estimates on a per-unit-of-output basis by dividing per-planted-acre costs by per-planted-acre yield. Per-unit-of-output costs are readily comparable with product prices and levels of Government support and are especially useful for examining effects of annual changes in yield on production costs.

Multi-output and joint production. Most agricultural commodities are produced by farm businesses producing more than one commodity. This strategy of diversification is carried out by farmers to manage risk and maximize profits. Some commodities are always produced jointly, that is, one commodity cannot be produced without the other, for example, oats and oat straw. Diversification means that some inputs, like tractors, are used in the production of more than one commodity. Joint production means that the costs and returns of the primary and secondary commodity cannot be separated.

In the case of diversification, ERS uses standard, accepted procedures for allocating inputs that are shared in the production of other commodities. These allocation rules, based on the acres covered or

the hours used for a particular piece of machinery, are necessary for machinery-related costs. For joint production, where inputs cannot be separated among products, ERS includes the value of the secondary commodity with the returns of the primary commodity.

Separation of production and marketing costs. ERS separates the costs of production from the costs of marketing by measuring production costs to the point of first sale or storage, if the crop is not sold immediately after harvest. Costs of drying and hauling the crop to the elevator or processor are included. Because ERS excludes storage costs, all crops, except the sugar crops, are valued at their time of harvest.

Government Programs and Production Costs and Returns

The Government operates agricultural programs that support farm prices and income. The Government intervenes directly in agricultural markets by limiting the import of products, by making direct purchases, and by establishing marketing quotas. The Government also supports prices through the Commodity Credit Corporation's (CCC) nonrecourse loans. These programs may affect the market prices that ERS uses to estimate values of production and, consequently, returns to production. The Government also supports farm income with direct payments to farm operators and landlords for some commodities.

The CCC currently operates price support programs for corn, grain sorghum, barley, oats, wheat, rice, soybeans, upland cotton, and the sugar crops. Under the price support programs, producers or millers and processors of sugar crops (who must pass on some of the guaranteed price benefits to growers) are able to place a crop under loan and receive a payment at the loan rate. They may either repay the loan and sell the crop on the market or forfeit the crop to the CCC at no penalty other than storage costs. The loan program supports prices by temporarily removing products from the market.

Since 1986, the Government has also operated marketing loan programs for rice and cotton. Participants can repay CCC loans on rice or cotton at the lower of either the loan rate or the world price. The effect of the marketing loan program is to allow market prices to fall below the loan rate. Marketing loan payments from the cotton and rice programs are not included in the values of production in the cost and return accounts. However, the indirect effects of the CCC and marketing loan programs on market

prices are included. Appendix table 2 shows the levels of price support through the CCC loan program for 1986-88.

ERS excludes the direct effects of income support programs from the cost and return accounts. The Government currently operates income support programs for the production of corn, grain sorghum, barley, oats, wheat, and rice. Farm operators and landlords receive deficiency payments based on proven yields when they participate in the program. Payment rates are calculated as the lesser of either the difference between CCC loan rate and the Government-established target price or the market price and the target price. A participant in the income support program must set aside or conserve a portion of acreage that would have been planted to a particular crop in return for direct Government payments based on production of the crop on his remaining acreage. Participants may also be required to incur costs by maintaining a cover crop or controlling weeds on set-aside acreage. ERS does not include either these costs or direct payments for participating in the Government commodity-based income support programs. If ERS included the direct effects of Government programs on costs, the net land return would probably be greater than what it is without the direct effects (see "Why We Value Land the Way We Do"). Actual participation rates in the barley, corn, wheat, rice, and cotton income support programs were above 70 percent in 1986, 1987, and 1988, which suggests that the programs offered a net benefit that is not captured in the cost and return accounts. (See app. table 2 for information on target price levels and program participation for the income support programs for 1986-88.)

ERS cannot exclude more subtle effects of Government programs on prices and returns. For example, participants forgo current income from their acreage that is set aside, which may lead to increased output on the acreage in following years because the land has been fallow or planted to legumes. Both participants and nonparticipants are affected when the supply of a crop is restricted and prices rise.

Gross Value of Production

ERS commodity cost and returns accounts include estimates of values of production for each crop. Gross value of production is defined as the value of primary products and secondary products at the time of harvest and excludes change in value that could follow from storing and marketing crops later. Primary products are corn, sorghum, barley, oats, wheat, rice, soybeans, sunflowers, peanuts, flaxseed,

cotton, sugar beets, and sugarcane. Secondary products are straw, peanut hay, cottonseed, and beet tops.

ERS does not include in values of production income from crop insurance indemnities, disaster assistance, or direct payments from Government commodity programs. Participation in these programs is voluntary and has costs that are not included in these cost-of-production estimates.

Variable and Fixed Cash Expenses

Cash expenses are out-of-pocket expenses incurred during the production process. Variable cash expenses are incurred only if production takes place and vary as quantities of inputs and their prices vary. They include seed, fertilizer, lime and gypsum, chemicals, custom operations, hired labor, fuel, lubrication and electricity, repairs, irrigation water, drying, cotton ginning, freight and dirt hauling charges for sugar beets, and technical services such as insect scouting and soil testing. Fixed cash expenses include taxes and insurance and portions of the general farm overhead, interest paid on operating loans, and interest paid on real estate loans.

Capital Replacement

Capital replacement is the portion of the value of machinery and equipment, in addition to repairs, that is used up in the production of a particular crop. Capital replacement in any particular year may be regarded as a discretionary expense. It may be deferred in a year when income is low, but ultimately must be paid to maintain the capital stock.

Economic (Full-Ownership) Costs

Economic costs are long-term costs, designed to account for the value of all inputs. An imputed cost is calculated for all inputs, whether owned, rented, or financed, in a consistent manner. Economic costs reflect the production situation as if the operation and landlord fully owned the production inputs. Therefore, the economic costs and returns section does not include any interest payments for loans. This full-ownership assumption of costs and returns allows comparisons across crops without regard to the actual ownership and debt positions of producers. For example, if wheat producers in the Southwest are more in debt than those in the Northwest, the higher interest expenses of the southwestern producers will be reflected in cash expenses only. The cost of this greater financial exposure will not be evident in a comparison of total economic costs.

ERS defines economic costs as variable cash expenses, general farm overhead, taxes and insurance, capital replacement, and allocated returns to the capital invested in the production process, unpaid labor, and land. Cash expenses, which are part of full economic costs, are valued at market prices reported by producers and suppliers. Opportunity costs are imputed from values of capital, land, and unpaid labor in alternative uses, and are called allocated returns to owned inputs.

The return to operating capital is the cost of carrying input expenses from the time they are used until harvest. ERS imputes this cost at the 6-month U.S. Treasury bill rate. The return to other nonland capital is the cost of having capital invested in farm machinery and equipment. ERS imputes this cost as equal to the longrun rate of return to production assets in the farm sector. ERS values land in cost-of-production accounts at its rental value. The alternative use for land for any one landowner is to rent it to someone else who will produce the same crop. The net land return is a composite share and cash rental rate for a particular crop, minus real estate taxes and the value of variable inputs supplied by the landlord. ERS imputes the value of unpaid labor (hired labor is a variable cash expense) at the wage rate for agricultural workers. Additional value of unpaid labor, such as for management and entrepreneurial skill, is measured as a residual return.

Why We Value Land the Way We Do

Land is probably the most important input in agriculture. It is also the most difficult input for which to estimate a cost under the ERS system, largely because it is a relatively "fixed" input and there is only a limited supply. So, the returns from production get capitalized into the value of an asset like land. The greater the returns to a production process, such as corn production, the greater is the value of the fixed asset, corn land. When the value of land changes, the cost of using the land changes. A simultaneous relationship exists between the costs of production through land charges and the commodity price. This creates a special challenge because the goal of ERS is to estimate costs and returns in the absence of a major source of return to production, Government programs.

The current procedure for estimating the returns to land is based on information about cash and share market rental rates. These two rental rates are weighted together based on the share of land rented in an area on a cash or share basis to yield one rental rate. This weighted rate, minus real estate taxes that

are already included in the taxes and insurance costs, is then applied to all acres in production whether owned or rented.

The cash rental rate is the rate actually paid by producers as reported on the FCRS. The share rental rate is a calculated rental rate based on the share of production producers agreed to provide landlords and the inputs landlords provided in the production process. Both of these statistics are collected in the FCRS. The share rental rate is calculated by first computing a gross share rental rate equal to the quantity of output provided to the landlord, multiplied by the harvest-month price for the commodity. (This harvest-month price is the same price used to value production in computing the total value of production in the returns section of the statement.) A net share rental rate is then calculated by subtracting the value of the per-acre expenses covered by the landlord from the per-acre value of production that goes to the landlord. We include landlord expenses for production inputs with the operation expenses for items in the cash portion of the cost and returns statement.

Government programs can have a profound impact on the rental market for farmland. Landowners generally can receive payments directly from the Government when they lease their land on a share basis but not on a cash basis. The upshot is more share renting for commodities for which there are Government programs since payment limits are generally set per person not per farm. Landowners of land enrolled in Government programs are generally more willing to accept a lower rental rate (before payments) under a share agreement than under a cash agreement, since landowners will be receiving income under the Government programs for their share of the production. Producers may be willing to pay more to rent land under a cash rental agreement because the producer may be entitled to receive Government payments on all of the production.

Without Government payments, however, we would expect share rental rates to be higher than cash rental rates because under share rental rates landowners must share in the risks of production. Under share rental arrangements, as mentioned above, the share of production that goes to landlords is valued by ERS at a market price. The market price is often less than the per-unit return for commodities under Government programs. Because cash rental rates are set in consideration of Government payments, Federal programs indirectly influence ERS estimates. Treating cash and share rent charges differently can

mean that land rental practices in an area can affect levels and differences in land returns.

ERS estimates of net land returns have not always been calculated under the current approach. When the cost of production estimates were first mandated, the 1973 legislation specified that the Secretary of Agriculture should estimate a return to fixed assets equal to the existing interest rates charged by the Federal Land Bank. The 1981 Act deleted that specification. The 1981 Act also established a committee, National Agricultural Cost of Production Standards Review Board, to review the procedures used by ERS. This committee recommended that ERS adopt the current market rental rate approach.

Net Returns

ERS calculates net returns after cash expenses, after cash expenses and capital replacement, and after total economic costs.

Net returns after cash expenses are the difference between gross value of production and total cash expenses. They are a measure of short-term returns to production and are the amount of cash that would be left after all cash expenses, including interest payments, have been made. They indicate what would be available to cover longer term costs, such as capital replacement, or to retire debt. Rational growers will not produce unless at least variable cash expenses can be covered in the short run.

Net returns after cash expenses and capital replacement are the difference between gross value of production and total cash expenses and capital replacement, a shortrun measure of all inputs consumed in production. Producers do not necessarily have to replace capital consumed every production period, but eventually capital must be replaced for production to continue.

Residual returns to management and risk are the difference between gross value of production and total economic costs. Returns to risk are expected to average near zero and returns to management are expected to be positive, therefore, returns to both risk and management are expected to be positive on average.

Data Sources and Estimation Procedures

As a first step in estimating regional and national costs of production, ERS constructs State-level per-

acre production budgets for each crop. These State-level budgets, which are estimates of actual input and machinery use made from the FCRS, are combined with input price data from other sources, primarily USDA's *Agricultural Prices*, and processed by a computerized budget generator. The ERS budget generator was developed from the Firm Enterprise Data System budget generator. Modifications have been made so that the estimates generated conform to the current ERS definition and structure of accounts. ERS makes regional and national cost-of-production estimates by adding together the State-level costs per acre in proportion to the acres of a crop planted in each State.

The underlying production budgets are constructed as FCRS data on production practices for a crop become available, about every 4 years, and are updated annually with price and yield data from whole-farm versions of the FCRS and other reports.

Farm Costs and Returns Survey

The Farm Costs and Returns Survey (FCRS) is conducted annually by ERS and the National Agricultural Statistics Service (NASS). Each year produces multiple versions of the FCRS: an indepth whole-farm version and commodity cost-of-production versions. All versions have in common questions about whole-farm expenses and income. Each cost-of-production version gathers detailed information about input use, field operations, and production costs of a particular crop. Because of survey costs, USDA cannot undertake detailed surveys of every commodity in every year. The FCRS covers each commodity about every 4 years. Rice, oats, flax, sugar beets, and Louisiana and Texas sugarcane were covered by the FCRS in 1988; barley, corn, cotton, and peanuts were covered in 1987; sorghum, soybeans, sunflowers, and wheat in 1986. Except for oats and flax, which are based on a 1983 survey, the estimates in this publication are based on the most recent FCRS data. ERS updates the FCRS-based costs from other data sources in nonsurvey years.

The FCRS is a multiframe stratified survey. The sample is drawn randomly from stratified list and area frames. For a particular cost-of-production version, the list frame is made up of farms known to have previously produced the commodity. The list frame is stratified by size. The area frame is made up of land segments and is stratified by land use. Each farm sampled represents a number of similar farms, the particular number being the survey expansion factor, which is the inverse of the probability of the sampled farm being selected. Data are expanded by the survey

expansion factors to produce estimates for the population of all farms producing the commodity.

Farmers are interviewed in person by field enumerators using questionnaires developed by NASS and ERS. The FCRS takes place during February and March with questions being asked about production in the previous year.

Gross Value of Production

ERS calculates gross value of production per acre for each crop except sugar beets and sugarcane by multiplying the harvest-month price for the crop times its per-planted-acre yield. Harvest months, prices, and yields are specified at the State level and aggregated to regional and national estimates. ERS values production of sugar beets and sugarcane at season-average prices and sugarcane yield per harvested acre. Payments from Government programs, such as deficiency and disaster payments, are excluded from gross value of production. State-level yields are updated annually from *Crop Production*. Prices, except for sugar beets and sugarcane, are updated annually from *Agricultural Prices*. Sugar-beet and sugarcane prices are based on factory or mill payments to growers. Gross value of production of sugar beets and sugarcane is the same as growers' cash receipts.

Variable Cash Expenses

Data on seed expenses come from the FCRS and NASS. For every crop, except sugar beets and sugarcane, seeding rates and seed prices per unit are gathered separately and are combined to arrive at seed costs per acre. Total seed expenses for sugar beets and sugarcane are asked directly on the FCRS with no measure being made of seeding rates or unit prices. Seed expense for sugarcane includes only the cost of purchased seed. Costs of homegrown seed are included in other variable cash expense items. For other crops, seeding rates and the proportion of seeds purchased commercially and homegrown are determined in the FCRS. NASS furnishes commercial seed prices except for rice seed, which, beginning in 1988, is obtained from the FCRS. Homegrown seed is valued at the previous year's average price for the crop plus an allowance for cleaning and treating. Seeding rates are held constant between surveys. ERS updates seed prices annually.

ERS calculates fertilizer costs for every crop except sugar beets and sugarcane by multiplying prices per pound of primary nutrient (the same for all crops) by the pounds of nutrients applied to each crop. ERS

estimates nutrient prices for each year by weighting prices of commercial fertilizers by the amount of each nutrient in the mixture of fertilizer and by the amount of the fertilizer mixture used in each State. Prices and compositions of commercial fertilizers come from *Agricultural Prices*. Data on the amount of the fertilizers used come from *Commercial Fertilizers*. The FCRS supplies fertilizer rates for each crop. Rates of application of lime, gypsum, secondary nutrients, and micronutrients for each crop are also obtained from the FCRS. Annual prices of lime come from *Agricultural Prices*, gypsum from major suppliers, secondary and micronutrients from the *Chemical Marketing Reporter*. Sugar-beet and sugarcane fertilizer and other soil nutrient costs are estimated directly from the fertilizer expenses reported for the crops in the FCRS. Units of fertilizer and unit prices are not used to calculate fertilizer expenses.

ERS estimates crop production chemical costs from expenses reported in the FCRS and *Agricultural Prices*. Producers are asked their expense for chemicals--pesticides, growth regulators, defoliant--used on the crop during the year that a detailed version for the crop is included in the FCRS. In nonsurvey years, ERS adjusts the chemical expenses by the annual change in the index of prices paid for agricultural chemicals published in *Agricultural Prices*.

When a producer hires machinery and labor to perform a farming operation, ERS counts the cost as a custom operation. Services that are often custom operations are rice seeding from airplanes, crop spraying, and hauling grain to an elevator. Although commercial grain drying and cotton ginning may be considered custom operations, ERS lists them as separate items. Expense data for custom operations for a crop come from the enterprise cost-of-production versions of the FCRS. Custom operation costs are adjusted between surveys by the index of farm services and cash rent, which is published in *Agricultural Prices*.

Fuel, lubrication, and electricity comprise the cost of fuel and power used by tractors, harvesters, trucks, pickups, and irrigation pumps. Sugar-beet and sugarcane fuel, lubrication, and electricity costs come from producers' estimates in the FCRS of the portion of whole-farm fuel expenses that is for sugar beets or sugarcane. For all other crops, ERS estimates fuel, lubrication, and electricity costs from FCRS and engineering performance data. FCRS data indicate the machines, their sizes, and the acres they cover. These data are combined with engineering specifications of speed and field efficiency to arrive at

hours of use per acre. The hours each machine is used is multiplied by a fuel consumption rate and fuel price that is related to the size of the machine and the type of fuel. ERS estimates electricity costs of pumping irrigation water from FCRS data on well, pump, and motor sizes and the hours that water is pumped. ERS estimates the lubrication costs at 15 percent of fuel costs. Fuel prices are updated annually. ERS obtains prices of gasoline, diesel, and liquefied petroleum gas from *Agricultural Prices* and subtracts Federal and State per gallon taxes on gasoline that are refunded for agricultural use. Natural gas prices are obtained from the Department of Energy, electricity prices from the Edison Electric Institute. Machinery performance data come from the American Society of Agricultural Engineers.

Hours of machine use form the basis of the estimate of repair costs for all crops except sugar beets and sugarcane. ERS first calculates the total accumulated repairs for a machine from the list price and age of the machine and engineering relationships measured in the Nebraska tractor tests. Total accumulated repairs for a machine are then divided by an estimate of the total accumulated hours that the machine has been used. The resulting repair rate per hour is multiplied by the hours that the machine is used in the production of the crop. List prices for machinery are updated annually from producer price indexes for farm machinery published by the Department of Labor. Sugar-beet and sugarcane repair costs are calculated from producers' estimates in the FCRS of the portion of whole-farm vehicle, machinery, and equipment repair expenses.

ERS currently follows two approaches to estimating labor costs for a crop. The first approach, which applies to wheat, soybeans, sunflowers, flaxseed, oats, and grain sorghum, in this publication as well as all estimates published in previous years, counts hours of labor per acre of a crop in relation to hours of machinery use plus hours of hand labor. Machinery labor is 110 percent of tractor time and 120 percent of self-propelled implement time. Irrigation labor is related to the type of irrigation system and the hours that water is pumped. Additional hours of hand labor come from the FCRS. The total hours of labor are distributed between paid and unpaid (a noncash cost included as an allocated return) based on the portion of labor on crop farms that was paid a cash wage. Hours of labor are multiplied by wage rates, published in *Farm Labor*, and include an allowance for the employer's share of Social Security. Wage rates are updated annually. The second estimating approach, which applies to barley, corn, cotton, peanuts, sugarcane, sugar beets, and rice, arrives at

the hired labor cost from estimates of the portion of whole-farm cash expenses for labor that was for the particular crop enterprise. The FCRS supplies data on total expenses for contract labor, cash wages, bonuses, and the producer's estimate of the value of noncash benefits and of the percentage of each item that was for the particular crop. The hired labor cost, under the second approach, is adjusted by the percentage change in the State-level agricultural wage rate in nonsurvey years.

The cost of water purchased from irrigation districts and the cost of pumping private association water are listed by ERS as purchased irrigation water. The cash costs of pumping water from a producer's own wells are included in fuel, lubrication, and electricity, repairs, and labor. Irrigation water and fees paid by sugar-beet landlords are excluded from purchased water costs but included in the rental value of land used to measure the net return to land. Data on expenses for purchased water come from the FCRS.

ERS includes drying costs for corn, sorghum, sunflowers, peanuts, and rice. To estimate drying costs, ERS uses commercial rates and specifications of fuel types and initial moisture content. Data are from the FCRS and engineering relationships on the energy required to remove moisture. Fuel prices and production data are updated annually.

Cotton ginning costs per acre, updated annually, derive from costs of ginning per bale and cotton yield per acre. Data on ginning charges per bale come from annual ERS staff reports. Cotton yield data come from *Crop Production*.

ERS includes sugar-beet freight and dirt-hauling charges from the FCRS, including deductions made by processors to equalize freight costs among growers and to minimize the dirt hauled to the sugar-beet processing plant. Hauling allowances, which are paid to some sugar-beet and sugarcane growers, are listed separately and subtracted from variable cash expenses.

Miscellaneous costs include baling wire for straw, levee gates for rice, and, for sugar beets, deductions by processors for testing and expenses for association dues, disease control, and research activities. Data on miscellaneous expenses come from the FCRS.

Technical services include soil testing, scouting, and land surveying. As with custom operations, data on expenses for technical services are drawn from the specialized versions of the FCRS and updated annually by the index of farm services and cash rent.

Technical services for sugar beets and sugarcane are included in the custom operations cost item.

Fixed Cash Expenses

General farm overhead is expenses for electricity and nonirrigation water for general farm use, telephone, farm shop and office equipment and supplies, fence maintenance and repairs, water drainage, farm share of motor vehicle registration and licensing fees, accounting and legal fees, business travel, dues for memberships in farm organizations, farm share of liability and blanket insurance policies, and herbicides used to maintain farm roads and ditches.

ERS uses two methods to allocate the general farm overhead expenses to particular crop accounts. The first method, which applies to oats, flaxseed, soybeans, sorghum, sunflowers, and wheat, first adds together the general farm overhead expenses on farms with more than 60 percent of their total value of production from field crops and then allocates a portion of general farm overhead expenses to each field crop enterprise in proportion to its gross value of production. This method recognizes that the amount of general farm overhead attributed to a particular crop varies from year to year as gross value of production varies, even if the overall expense for general farm overhead is constant. The second method, which applies to the sugar crops, barley, corn, cotton, peanuts, and rice, totals general farm overhead expenses for all farms growing each crop in its FCRS year. General farm overhead costs are then allocated according to relative value of production in the FCRS year and adjusted in nonsurvey years by the percentage change in total general farm overhead expenditure for all farms. Data come from whole-farm questions asked annually on the FCRS.

Taxes on a crop enterprise are estimated on machinery and on farm real estate. ERS calculates a tax cost for each machine based on the current purchase price of the machine, lagged 4 years, and an average tax rate for agricultural machinery. ERS estimates taxes on farm real estate by dividing total annual real estate taxes paid by the acres of farmland owned. ERS estimates the annual insurance charge for machinery in a manner similar to taxes on machinery. Data on machinery prices are updated annually from *Agricultural Prices*. Data on real estate taxes come from the specialized versions of the FCRS and are updated between surveys by State-level changes in real estate taxes.

ERS allocates a portion of whole-farm interest expenses to each commodity in a manner similar to general farm overhead. For all crops except sugar beets and sugarcane, interest expenses are separated into two categories: interest on operating loans and interest on real estate. Interest on operating loans includes finance charges and service fees on loans for machinery, the farm share of motor vehicles, fertilizer, seed, chemicals, and other inputs. Interest on real estate includes interest and service fees on farm business loans, land contracts, and other loans secured by real estate. Interest categories are combined for the sugar crops. Data on interest expenses come from whole-farm questions asked annually on the FCRS.

Capital Replacement

Capital replacement costs for machinery, vehicles, and irrigation equipment are based on a per-hour rate that the value of each machine, vehicle, or piece of equipment is used and on the hours per acre that each is used in the production of a crop. ERS calculates hourly capital replacement per machine by dividing the machine's current purchase price less salvage value by the hours that the machine will be used. ERS estimates the hours that farm machinery, vehicles, and irrigation equipment are used per acre of a crop from FCRS data on sizes, acres covered, miles driven, and water applied plus performance data. Machinery prices are updated annually from *Agricultural Prices*. Performance data come from the American Society of Agricultural Engineers.

Economic (Full-Ownership) Costs

ERS estimates the returns to operating capital by multiplying the value of inputs that are used up in production--seed, fertilizer, and fuel--by the time between their use and harvest, and by the cost of capital, which is the average interest rate on 6-month U.S. Treasury bills. The interest rates, reported by the Federal Reserve, for 1986, 1987, and 1988 were 5.40, 6.05, and 6.92 percent.

ERS estimates the return to other nonland capital by multiplying the current value of machinery and

equipment used on a commodity by the real rate of return to production assets in the farm sector over the previous 10 years. ERS calculates the rate of return from data in *Economic Indicators of the Farm Sector: National Financial Summary*. The rates for 1986, 1987, and 1988 were 2.22, 2.47, and 2.81 percent.

ERS allocates a net return to land based on its rental value in the production of a particular crop. The rental value is a composite of cash- and share-rental values. The cost-of-production versions of the FCRS measure cash rental rates and the percentage of production paid as a share rent for each crop as well as the proportions of land cash- and share-rented. Nonsurvey year cash rental rates are updated from the ERS publication, *Agricultural Resources: Land Values and Markets Situation and Outlook Report*. Share rents change annually as a crop's gross value of production, the product of yield and price, changes. The proportions of cash- and share-rented acreage are not changed in nonsurvey years. ERS subtracts real estate taxes, which are included under taxes and insurance, from the rental values. Double-cropped acreage is counted half for each of the two crops. Crop acreage planted after fallow is charged rental value for 2 years. ERS includes in the land return an opportunity cost of co-op shares owned by sugar-beet growers in Minnesota and eastern North Dakota.

ERS uses two approaches to estimate the amount and value of unpaid labor. The first approach measures the hours of labor on a crop in proportion to the machinery used plus an estimate of the hours of hand labor. The portion of the total hours of labor that is unpaid is estimated annually from the FCRS. The second approach measures the hours of labor for a crop from producers' estimates of average unpaid hours worked per week and the percentage of the unpaid time for that crop. The unpaid hours include the operator's time, if he was not paid a cash wage, and the time of all other unpaid workers. Under both approaches, ERS assesses the hours of unpaid labor at the same agricultural wage rate that is used in the first approach to estimating hired labor expenses.

Figure 1

Barley Production Regions

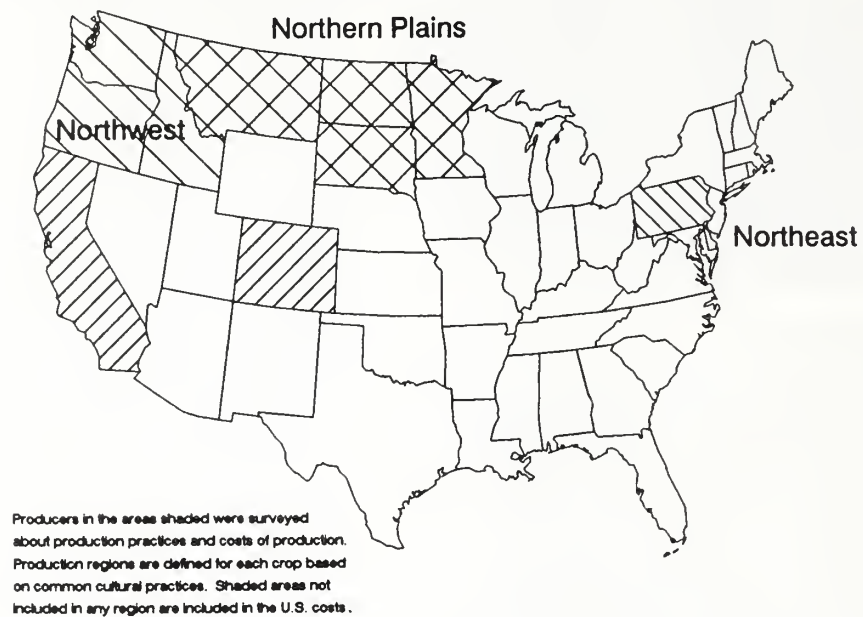


Figure 2

Corn Production Regions

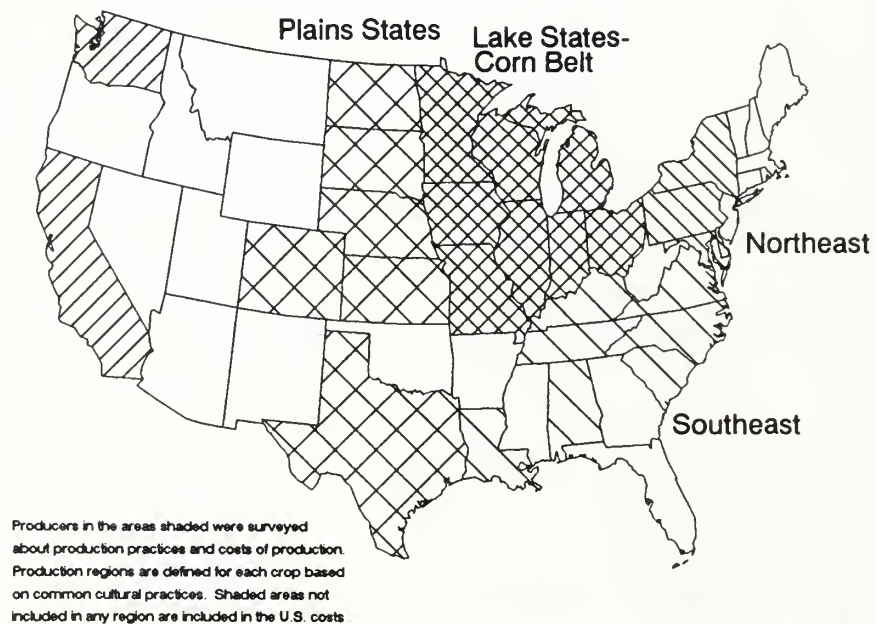


Figure 3

Cotton Production Regions

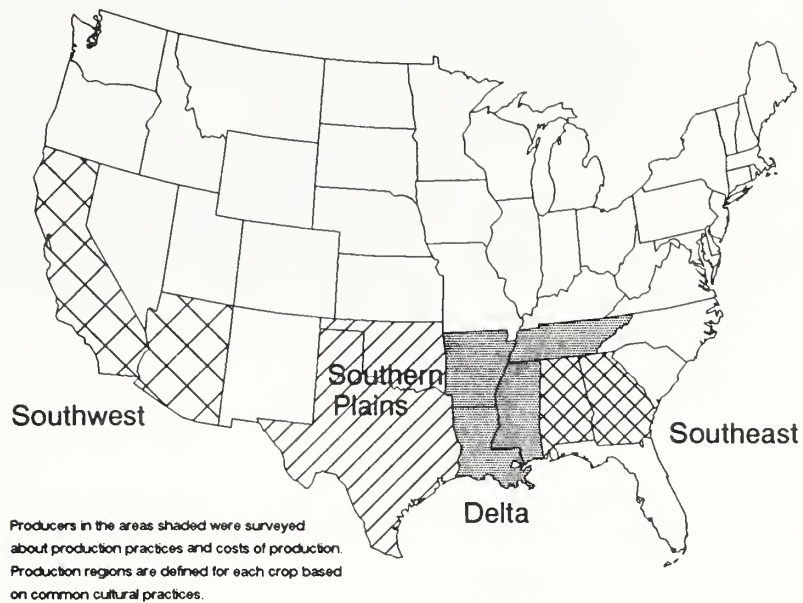


Figure 4

Flax Production Region



Figure 5

Oats Production Regions



Figure 6

Peanut Production Regions

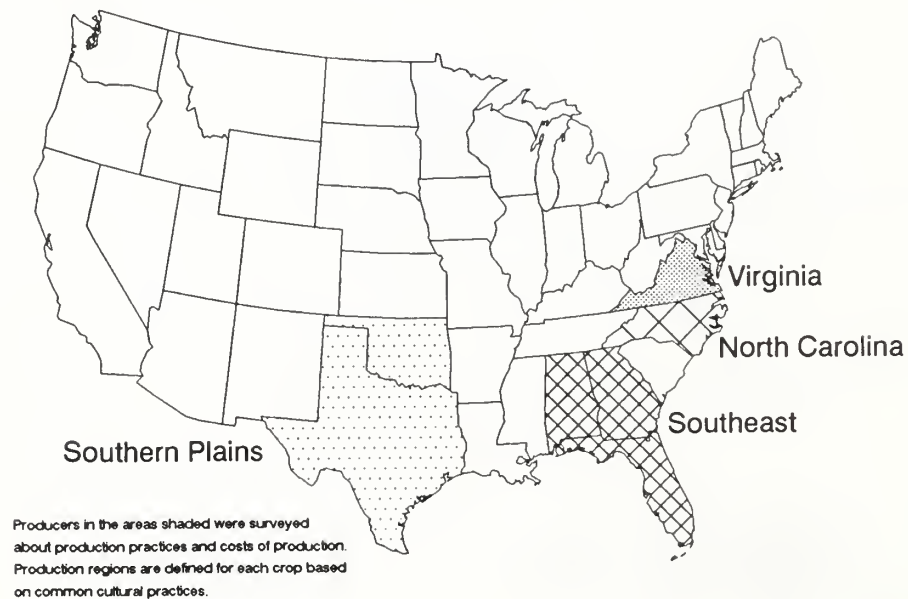


Figure 7

USDA Rice Costs-of-Production Regions

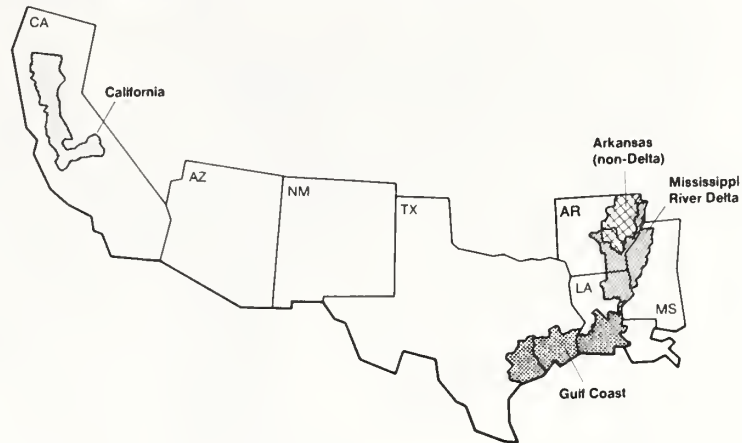


Figure 8

Sorghum Production Regions

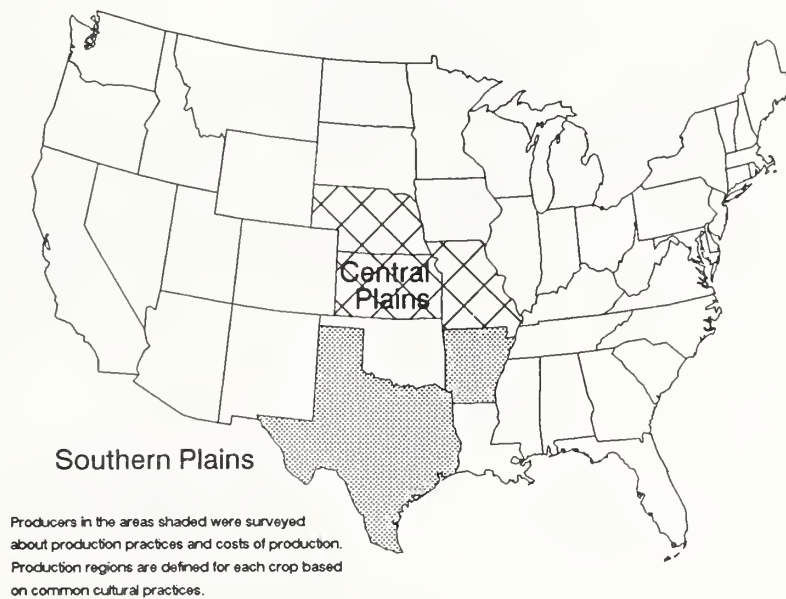


Figure 9

Soybean Production Regions

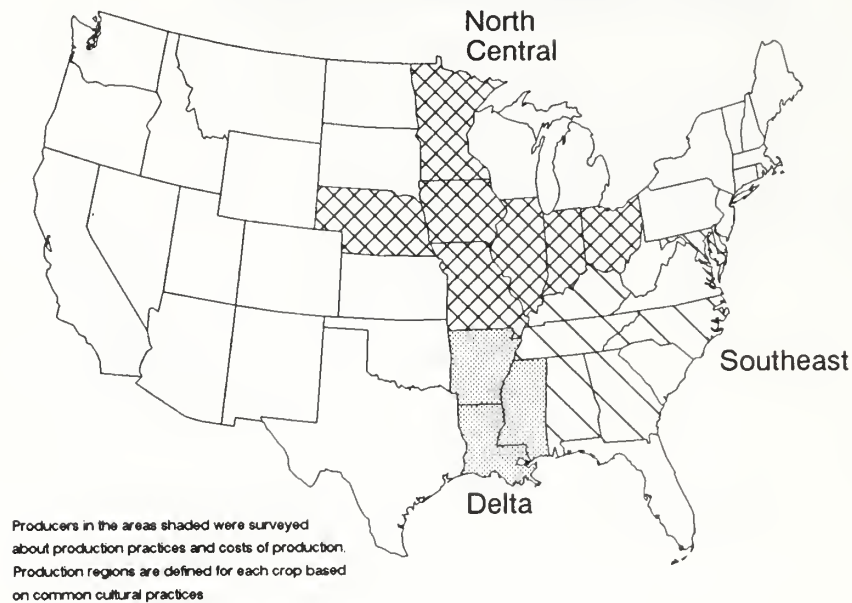


Figure 10

Sugar Beet Production Regions

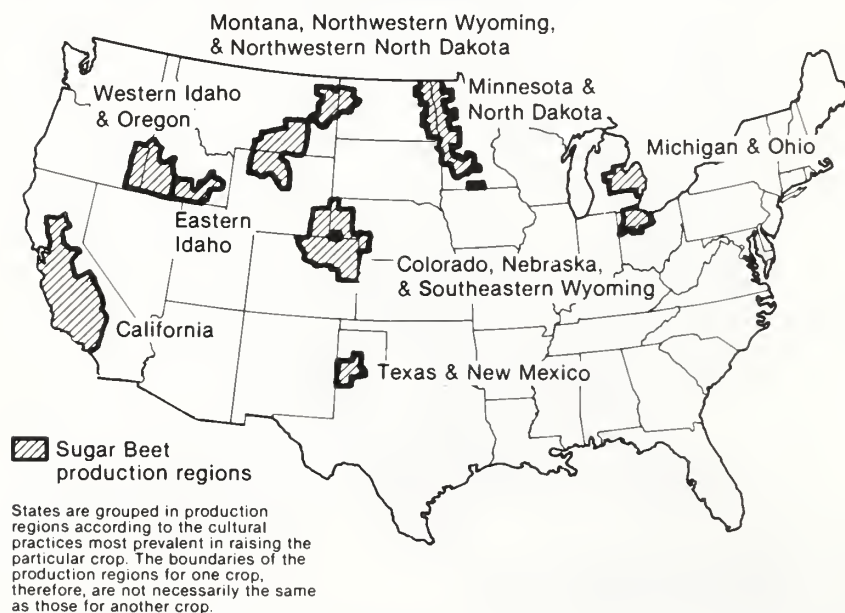


Figure 11

Sugarcane Production Regions

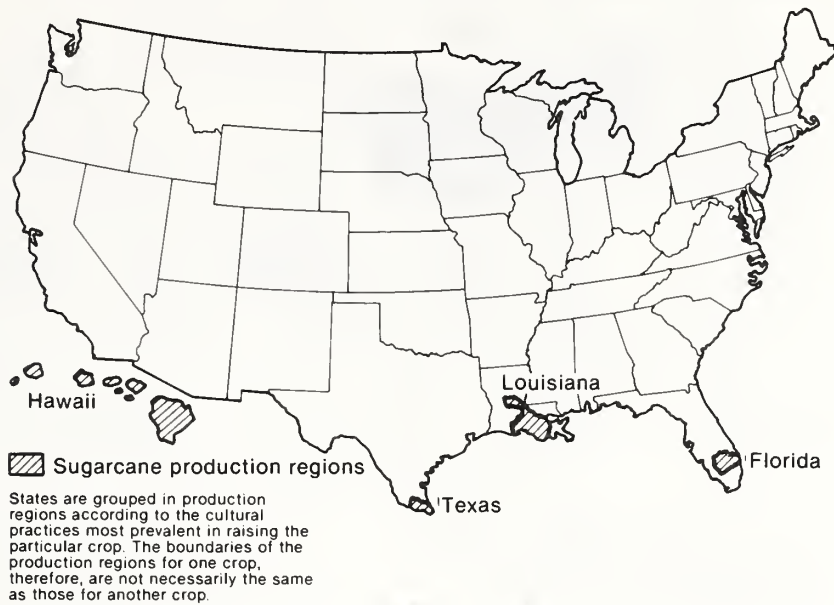


Figure 12

Sunflower Production Region

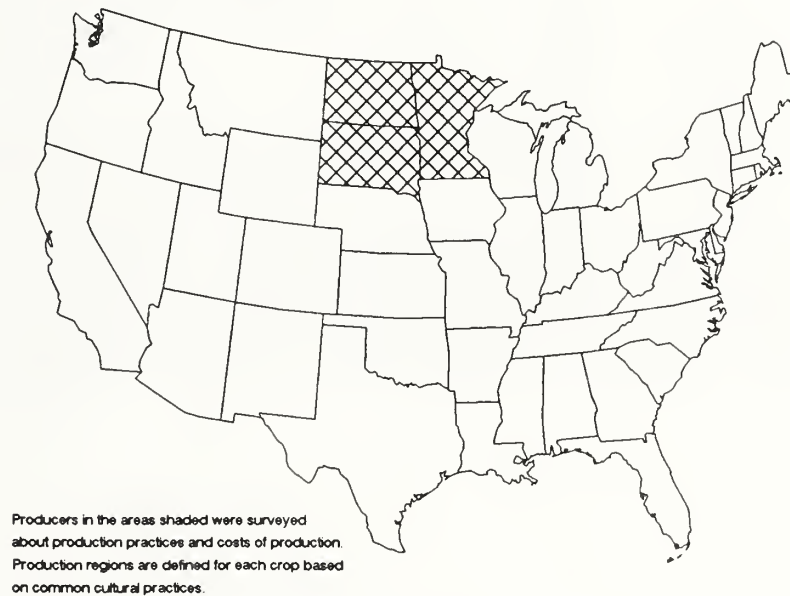


Figure 13

Wheat Production Regions



Table 1--U.S. barley production costs and returns per planted acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	68.92	79.98	80.13
Secondary crop	2.31	2.28	3.52
Total	71.23	82.26	83.65
=====			
Cash expenses:			
Seed	7.35	5.92	6.35
Fertilizer	13.83	13.00	14.80
Lime and gypsum	.12	.12	.13
Chemicals	6.29	6.17	6.25
Custom operations	2.43	2.43	1.96
Fuel, lubrication, and electricity	7.02	7.18	7.10
Repairs	7.56	7.06	6.93
Hired labor	6.13	5.85	6.20
Purchased irrigation water	2.55	2.34	2.39
Technical services	.23	.23	.23
Total, variable cash expenses	53.51	50.30	52.34
General farm overhead	6.28	5.98	6.48
Taxes and insurance	7.96	8.30	8.12
Interest on operating loans	5.47	3.78	3.41
Interest on real estate	8.26	6.54	6.14
Total, fixed cash expenses	27.97	24.60	24.15
Total, cash expenses	81.48	74.90	76.49
Net returns less cash expenses <u>3/</u>	-10.25	7.36	7.16
Capital replacement	24.41	23.61	22.90
Net returns less cash expenses and capital replacement	-34.66	-16.25	-15.74
=====			
Economic (full ownership) costs:			
Variable cash expenses	53.51	50.30	52.34
General farm overhead	6.28	5.98	6.48
Taxes and insurance	7.96	8.30	8.12
Capital replacement	24.41	23.61	22.90
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	.82	.83	1.02
Return to other nonland capital <u>5/</u>	4.48	4.83	5.21
Net land return <u>6/</u>	26.70	27.73	29.60
Unpaid labor	11.07	10.49	11.08
Total, economic costs	135.23	132.07	136.75
Residual returns to management and risk <u>7/</u>	-64.00	-49.81	-53.10
=====			
Harvest-month price (dollars per bushel)	1.47	1.69	2.88
Yield (bushels per planted acre)	46.83	47.42	27.81
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 2--Barley production costs and returns per planted acre, Northeast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	75.21	76.30	145.20
Secondary crop	44.80	53.60	59.20
Total	120.01	129.90	204.40
=====			
Cash expenses:			
Seed	17.30	15.79	15.14
Fertilizer	21.34	20.57	24.97
Lime and gypsum	4.44	4.86	4.46
Chemicals	2.66	2.66	2.66
Custom operations	7.27	6.93	8.13
Fuel, lubrication, and electricity	6.42	6.65	7.39
Repairs	7.39	7.34	8.02
Hired labor	10.29	9.72	11.62
Total, variable cash expenses	77.11	74.52	82.39
General farm overhead	5.65	5.52	5.85
Taxes and insurance	20.50	20.71	21.17
Interest on operating loans	2.44	1.72	1.52
Interest on real estate	3.37	2.73	2.53
Total, fixed cash expenses	31.96	30.68	31.07
Total, cash expenses	109.07	105.20	113.46
Net returns less cash expenses <u>3/</u>	10.94	24.70	90.94
Capital replacement	24.42	24.50	26.10
Net returns less cash expenses and capital replacement	-13.48	.20	64.84
=====			
Economic (full ownership) costs:			
Variable cash expenses	77.11	74.52	82.39
General farm overhead	5.65	5.52	5.85
Taxes and insurance	20.50	20.71	21.17
Capital replacement	24.42	24.50	26.10
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	.94	1.01	1.28
Return to other nonland capital <u>5/</u>	4.73	5.26	6.43
Net land return <u>6/</u>	26.50	29.51	34.05
Unpaid labor	13.63	12.92	14.58
Total, economic costs	173.48	173.95	191.85
Residual returns to management and risk <u>7/</u>	-53.47	-44.05	12.55
=====			
Harvest-month price (dollars per bushel)	1.35	1.45	2.40
Yield (bushels per planted acre)	55.71	52.62	60.50

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 3--Barley production costs and returns per planted acre,
Northern Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	51.16	63.42	50.82
Secondary crop	1.29	1.33	2.40
Total	52.45	64.75	53.22
Cash expenses:			
Seed	6.08	4.62	5.19
Fertilizer	12.90	12.26	14.35
Chemicals	5.38	5.45	5.50
Custom operations	1.68	1.74	1.02
Fuel, lubrication, and electricity	3.94	4.84	4.44
Repairs	6.29	5.88	5.32
Hired labor	4.36	4.23	4.38
Purchased irrigation water	1.17	1.24	1.12
Technical services	.27	.27	.27
Total, variable cash expenses	42.07	40.53	41.59
General farm overhead	5.23	5.14	5.52
Taxes and insurance	6.99	6.96	6.46
Interest on operating loans	4.84	3.44	3.09
Interest on real estate	7.37	5.97	5.56
Total, fixed cash expenses	24.43	21.51	20.63
Total, cash expenses	66.50	62.04	62.22
Net returns less cash expenses <u>3/</u>	-14.05	2.71	-9.00
Capital replacement	22.80	22.02	20.24
Net returns less cash expenses and capital replacement	-36.85	-19.31	-29.24
Economic (full ownership) costs:			
Variable cash expenses	42.07	40.53	41.59
General farm overhead	5.23	5.14	5.52
Taxes and insurance	6.99	6.96	6.46
Capital replacement	22.80	22.02	20.24
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	.56	.59	.73
Return to other nonland capital <u>5/</u>	4.21	4.52	4.58
Net land return <u>6/</u>	23.32	23.89	22.80
Unpaid labor	10.62	10.24	10.92
Total, economic costs	115.80	113.89	112.84
Residual returns to management and risk <u>7/</u>	-63.35	-49.14	-59.62
Harvest-month price (dollars per bushel)	1.18	1.47	3.01
Yield (bushels per planted acre)	43.28	43.05	16.90

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 4--Barley production costs and returns per planted acre, Northwest, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	116.33	138.57	161.33
Secondary crop	3.54	3.53	4.84
Total	119.87	142.10	166.17
=====			
Cash expenses:			
Seed	10.41	9.43	9.20
Fertilizer	17.18	16.31	16.88
Lime and gypsum	.45	.47	.50
Chemicals	8.81	8.74	8.70
Custom operations	3.73	4.12	4.06
Fuel, lubrication, and electricity	15.27	15.80	16.01
Repairs	11.65	11.84	12.65
Hired labor	10.88	11.10	11.47
Purchased irrigation water	5.98	6.01	6.35
Technical services	.14	.14	.15
Total, variable cash expenses	84.50	83.96	85.97
General farm overhead	9.35	9.14	9.83
Taxes and insurance	9.45	14.14	14.48
Interest on operating loans	7.71	5.45	4.88
Interest on real estate	10.36	8.43	7.93
Total, fixed cash expenses	36.87	37.16	37.12
Total, cash expenses	121.37	121.12	123.09
Net returns less cash expenses <u>3/</u>	-1.50	20.98	43.08
Capital replacement	31.17	31.69	33.70
Net returns less cash expenses and capital replacement	-32.67	-10.71	9.38
=====			
Economic (full ownership) costs:			
Variable cash expenses	84.50	83.96	85.97
General farm overhead	9.35	9.14	9.83
Taxes and insurance	9.45	14.14	14.48
Capital replacement	31.17	31.69	33.70
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.46	1.60	1.88
Return to other nonland capital <u>5/</u>	5.63	6.39	7.71
Net land return <u>6/</u>	35.62	42.14	49.92
Unpaid labor	11.16	10.95	11.13
Total, economic costs	188.34	200.01	214.62
Residual returns to management and risk <u>7/</u>	-68.47	-57.91	-48.45
=====			
Harvest-month price (dollars per bushel)	2.05	2.16	2.70
Yield (bushels per planted acre)	56.65	64.21	59.66
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 5--U.S. corn production costs and returns per planted acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	167.60	186.02	216.39
Total	167.60	186.02	216.39
=====			
Cash expenses:			
Seed	19.25	18.86	18.87
Fertilizer	38.51	35.25	43.07
Lime and gypsum	2.26	2.25	2.30
Chemicals	20.27	20.19	20.16
Custom operations	5.37	5.39	4.76
Fuel, lubrication, and electricity	9.01	10.60	10.57
Repairs	8.10	8.25	8.14
Hired labor	7.87	7.83	7.87
Purchased irrigation water	.31	.31	.32
Drying	9.21	8.20	5.90
Technical services	.25	.26	.26
Total, variable cash expenses	120.41	117.39	122.22
General farm overhead	10.42	10.15	10.81
Taxes and insurance	13.81	14.65	14.61
Interest on operating loans	7.71	5.45	4.91
Interest on real estate	13.25	10.66	10.03
Total, fixed cash expenses	45.19	40.91	40.36
Total, cash expenses	165.60	158.30	162.58
Net returns less cash expenses <u>3/</u>	2.00	27.72	53.81
Capital replacement	29.77	30.08	31.01
Net returns less cash expenses and capital replacement	-27.77	-2.36	22.80
=====			
Economic (full ownership) costs:			
Variable cash expenses	120.41	117.39	122.22
General farm overhead	10.42	10.15	10.81
Taxes and insurance	13.81	14.65	14.61
Capital replacement	29.77	30.08	31.01
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	2.53	2.75	3.41
Return to other nonland capital <u>5/</u>	5.29	5.95	6.79
Net land return <u>6/</u>	41.19	43.86	52.47
Unpaid labor	19.70	20.04	21.26
Total, economic costs	243.12	244.87	262.58
Residual returns to management and risk <u>7/</u>	-75.52	-58.85	-46.19
=====			
Harvest-month price (dollars per bushel)	1.41	1.57	2.60
Yield (bushels per planted acre)	118.46	118.83	83.15
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 6--Corn production costs and returns per planted acre,
Great Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	170.09	183.27	273.80
Total	170.09	183.27	273.80
=====			
Cash expenses:			
Seed	18.52	17.81	17.81
Fertilizer	25.54	23.02	26.24
Lime and gypsum	.32	.32	.32
Chemicals	13.92	13.89	13.90
Custom operations	5.05	5.13	5.04
Fuel, lubrication, and electricity	18.29	20.30	21.31
Repairs	11.82	11.89	12.49
Hired labor	9.56	9.51	9.86
Purchased irrigation water	1.14	1.11	1.15
Drying	8.84	7.96	7.44
Technical services	.45	.44	.46
Total, variable cash expenses	113.45	111.38	116.02
General farm overhead	8.26	8.00	8.51
Taxes and insurance	9.75	10.02	10.06
Interest on operating loans	8.01	5.59	4.99
Interest on real estate	8.20	6.61	6.13
Total, fixed cash expenses	34.22	30.22	29.69
Total, cash expenses	147.67	141.60	145.71
Net returns less cash expenses <u>3/</u>	22.42	41.67	128.09
Capital replacement	29.20	29.46	30.92
Net returns less cash expenses and capital replacement	-6.78	12.21	97.17
=====			
Economic (full ownership) costs:			
Variable cash expenses	113.45	111.38	116.02
General farm overhead	8.26	8.00	8.51
Taxes and insurance	9.75	10.02	10.06
Capital replacement	29.20	29.46	30.92
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	2.41	2.64	3.19
Return to other nonland capital <u>5/</u>	5.52	6.20	7.29
Net land return <u>6/</u>	44.02	47.53	76.09
Unpaid labor	19.15	17.70	19.05
Total, economic costs	231.76	232.93	271.13
Residual returns to management and risk <u>7/</u>	-61.67	-49.66	2.67
=====			
Harvest-month price (dollars per bushel)	1.48	1.59	2.60
Yield (bushels per planted acre)	114.64	115.23	105.50

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 7--Corn production costs and returns per planted acre,
Lake States and Corn Belt, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	171.65	192.13	196.45
Total	171.65	192.13	196.45
=====			
Cash expenses:			
Seed	19.39	19.11	19.19
Fertilizer	41.92	38.57	48.09
Lime and gypsum	2.53	2.53	2.68
Chemicals	22.19	22.22	22.23
Custom operations	5.21	5.22	4.35
Fuel, lubrication, and electricity	6.29	7.57	7.11
Repairs	6.64	6.68	6.35
Hired labor	6.93	6.90	6.90
Drying	10.40	9.15	5.84
Technical services	.21	.21	.21
Total, variable cash expenses	121.71	118.16	122.95
General farm overhead	11.53	11.26	11.94
Taxes and insurance	15.59	16.80	16.64
Interest on operating loans	8.45	5.95	5.32
Interest on real estate	15.63	12.61	11.82
Total, fixed cash expenses	51.20	46.62	45.72
Total, cash expenses	172.91	164.78	168.67
Net returns less cash expenses <u>3/</u>	-1.26	27.35	27.78
Capital replacement	30.55	30.83	31.51
Net returns less cash expenses and capital replacement	-31.81	-3.48	-3.73
=====			
Economic (full ownership) costs:			
Variable cash expenses	121.71	118.16	122.95
General farm overhead	11.53	11.26	11.94
Taxes and insurance	15.59	16.80	16.64
Capital replacement	30.55	30.83	31.51
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	2.54	2.76	3.45
Return to other nonland capital <u>5/</u>	5.26	5.90	6.63
Net land return <u>6/</u>	43.14	45.44	46.96
Unpaid labor	19.86	20.71	21.75
Total, economic costs	250.18	251.86	261.83
Residual returns to management and risk <u>7/</u>	-78.53	-59.73	-65.38
=====			
Harvest-month price (dollars per bushel)	1.36	1.53	2.55
Yield (bushels per planted acre)	126.25	125.69	77.06

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 8--Corn production costs and returns per planted acre, Northeast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	160.41	158.08	216.45
Total	160.41	158.08	216.45
=====			
Cash expenses:			
Seed	19.56	19.34	19.46
Fertilizer	38.59	36.67	43.78
Lime and gypsum	6.49	7.05	6.47
Chemicals	18.19	18.17	18.18
Custom operations	8.44	8.29	6.87
Fuel, lubrication, and electricity	9.32	9.71	9.88
Repairs	9.92	9.76	9.47
Hired labor	6.69	6.64	6.69
Drying	2.08	2.07	1.65
Technical services	.37	.36	.36
Total, variable cash expenses	119.65	118.06	122.81
General farm overhead	7.94	7.76	8.23
Taxes and insurance	15.51	15.26	15.20
Interest on operating loans	2.88	2.03	1.78
Interest on real estate	5.95	4.82	4.47
Total, fixed cash expenses	32.28	29.87	29.68
Total, cash expenses	151.93	147.93	152.49
Net returns less cash expenses <u>3/</u>	8.48	10.15	63.96
Capital replacement	30.67	30.39	31.12
Net returns less cash expenses and capital replacement	-22.19	-20.24	32.84
=====			
Economic (full ownership) costs:			
Variable cash expenses	119.65	118.06	122.81
General farm overhead	7.94	7.76	8.23
Taxes and insurance	15.51	15.26	15.20
Capital replacement	30.67	30.39	31.12
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	2.46	2.72	3.36
Return to other nonland capital <u>5/</u>	6.19	6.82	7.82
Net land return <u>6/</u>	24.33	25.70	31.55
Unpaid labor	20.95	19.93	23.52
Total, economic costs	227.70	226.64	243.61
Residual returns to management and risk <u>7/</u>	-67.29	-68.56	-27.16
=====			
Harvest-month price (dollars per bushel)	1.74	1.77	3.13
Yield (bushels per planted acre)	92.42	89.20	69.19
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 9--Corn production costs and returns per planted acre, Southeast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	120.32	145.21	204.99
Total	120.32	145.21	204.99
=====			
Cash expenses:			
Seed	19.45	18.98	18.54
Fertilizer	43.08	40.83	49.62
Lime and gypsum	3.02	3.15	3.11
Chemicals	21.62	21.68	21.62
Custom operations	5.65	5.83	6.42
Fuel, lubrication, and electricity	7.09	8.71	8.53
Repairs	8.88	9.54	9.69
Hired labor	10.01	9.77	9.61
Drying	3.52	3.67	3.10
Technical services	.10	.09	.08
Total, variable cash expenses	122.42	122.25	130.32
General farm overhead	7.32	7.08	7.64
Taxes and insurance	7.99	8.42	8.44
Interest on operating loans	3.24	2.20	1.91
Interest on real estate	8.26	6.58	6.42
Total, fixed cash expenses	26.81	24.28	24.41
Total, cash expenses	149.23	146.53	154.73
Net returns less cash expenses <u>3/</u>	-28.91	-1.32	50.26
Capital replacement	22.93	23.64	24.36
Net returns less cash expenses and capital replacement	-51.84	-24.96	25.90
=====			
Economic (full ownership) costs:			
Variable cash expenses	122.42	122.25	130.32
General farm overhead	7.32	7.08	7.64
Taxes and insurance	7.99	8.42	8.44
Capital replacement	22.93	23.64	24.36
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	2.59	2.84	3.51
Return to other nonland capital <u>5/</u>	4.32	5.03	5.87
Net land return <u>6/</u>	23.33	26.41	34.60
Unpaid labor	18.60	19.36	21.43
Total, economic costs	209.50	215.03	236.17
Residual returns to management and risk <u>7/</u>	-89.18	-69.82	-31.18
=====			
Harvest-month price (dollars per bushel)	1.66	1.79	2.88
Yield (bushels per planted acre)	72.46	81.02	71.17
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 10--U.S. cotton production costs and returns per planted acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	225.95	442.64	323.32
Secondary crop	29.73	46.61	57.99
Total	255.68	489.25	381.31
=====			
Cash expenses:			
Seed	6.23	8.16	8.03
Fertilizer	23.16	22.21	25.98
Lime and gypsum	.44	.41	.40
Chemicals	44.23	44.44	45.69
Custom operations	10.32	11.87	11.89
Fuel, lubrication, and electricity	22.60	26.91	27.92
Repairs	19.74	20.27	21.44
Hired labor	37.69	40.16	40.99
Purchased irrigation water	8.47	9.49	9.55
Ginning	43.37	65.26	55.93
Technical services	1.59	1.56	1.54
Total, variable cash expenses	217.84	250.74	249.36
General farm overhead	21.29	21.59	22.97
Taxes and insurance	12.66	13.76	13.99
Interest on operating loans	21.84	15.54	13.81
Interest on real estate	22.17	18.68	17.27
Total, fixed cash expenses	77.96	69.57	68.04
Total, cash expenses	295.80	320.31	317.40
Net returns less cash expenses <u>3/</u>	-40.12	168.94	63.91
Capital replacement	50.35	51.65	54.59
Net returns less cash expenses and capital replacement	-90.47	117.29	9.32
=====			
Economic (full ownership) costs:			
Variable cash expenses	217.84	250.74	249.36
General farm overhead	21.29	21.59	22.97
Taxes and insurance	12.66	13.76	13.99
Capital replacement	50.35	51.65	54.59
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	5.09	5.98	6.94
Return to other nonland capital <u>5/</u>	8.76	9.99	12.03
Net land return <u>6/</u>	51.44	83.48	72.51
Unpaid labor	20.65	21.36	21.67
Total, economic costs	388.08	458.55	454.06
Residual returns to management and risk <u>7/</u>	-132.40	30.70	-72.75
=====			
Harvest-month price (dollars per pound)	0.49	0.65	0.54
Yield (pounds per planted acre)	462.97	683.29	594.94

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 11--Cotton production costs and returns per planted acre, Delta, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	273.78	495.29	352.34
Secondary crop	29.10	47.43	57.24
Total	302.88	542.72	409.58
=====			
Cash expenses:			
Seed	5.35	7.65	7.43
Fertilizer	29.89	27.75	34.32
Lime and gypsum	.74	.72	.69
Chemicals	73.34	70.14	71.11
Custom operations	10.99	12.41	12.00
Fuel, lubrication, and electricity	19.24	24.80	25.49
Repairs	23.33	23.88	25.17
Hired labor	39.36	40.83	41.30
Ginning	43.36	60.74	52.27
Technical services	.64	.68	.68
Total, variable cash expenses	246.24	269.60	270.46
General farm overhead	21.32	20.54	21.77
Taxes and insurance	13.12	13.62	13.82
Interest on operating loans	22.56	15.71	13.88
Interest on real estate	20.34	16.63	15.42
Total, fixed cash expenses	77.34	66.50	64.89
Total, cash expenses	323.58	336.10	335.35
Net returns less cash expenses <u>3/</u>	-20.70	206.62	74.23
Capital replacement	56.25	57.18	60.24
Net returns less cash expenses and capital replacement	-76.95	149.44	13.99
=====			
Economic (full ownership) costs:			
Variable cash expenses	246.24	269.60	270.46
General farm overhead	21.32	20.54	21.77
Taxes and insurance	13.12	13.62	13.82
Capital replacement	56.25	57.18	60.24
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	5.16	5.77	6.71
Return to other nonland capital <u>5/</u>	10.56	11.91	14.28
Net land return <u>6/</u>	69.14	90.81	80.83
Unpaid labor	20.73	20.69	21.15
Total, economic costs	442.52	490.12	489.26
Residual returns to management and risk <u>7/</u>	-139.64	52.60	-79.68
=====			
Harvest-month price (dollars per pound)	0.48	0.64	0.53
Yield (pounds per planted acre)	565.15	779.89	662.98

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 12--Cotton production costs and returns per planted acre,
Southeast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	223.26	395.68	266.10
Secondary crop	23.04	27.67	43.37
Total	246.30	423.35	309.47
=====			
Cash expenses:			
Seed	5.36	6.41	6.36
Fertilizer	26.32	24.94	30.77
Lime and gypsum	3.09	2.19	1.94
Chemicals	99.30	96.99	98.71
Custom operations	7.36	9.74	8.36
Fuel, lubrication, and electricity	16.45	20.81	20.43
Repairs	18.50	18.69	19.92
Hired labor	42.82	44.56	46.15
Ginning	37.20	49.60	41.26
Technical services	.24	.24	.24
Total, variable cash expenses	256.64	274.17	274.14
General farm overhead	13.60	13.31	14.25
Taxes and insurance	12.72	13.23	13.67
Interest on operating loans	14.53	10.27	9.25
Interest on real estate	15.43	12.58	12.05
Total, fixed cash expenses	56.28	49.39	49.22
Total, cash expenses	312.92	323.56	323.36
Net returns less cash expenses <u>3/</u>	-66.62	99.79	-13.89
Capital replacement	58.39	58.99	62.82
Net returns less cash expenses and capital replacement	-125.01	40.80	-76.71
=====			
Economic (full ownership) costs:			
Variable cash expenses	256.64	274.17	274.17
General farm overhead	13.60	13.31	14.25
Taxes and insurance	12.72	13.23	13.67
Capital replacement	58.39	58.99	62.82
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	7.15	8.24	9.42
Return to other nonland capital <u>5/</u>	9.94	11.18	13.60
Net land return <u>6/</u>	41.01	46.40	44.54
Unpaid labor	16.46	17.34	19.18
Total, economic costs	415.91	442.86	451.62
Residual returns to management and risk <u>7/</u>	-169.61	-19.51	-142.15
=====			
Harvest-month price (dollars per pound)	0.49	0.66	0.54
Yield (pounds per planted acre)	457.82	603.07	496.54
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 13--Cotton production costs and returns per planted acre,
Southern Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	123.64	294.08	220.41
Secondary crop	14.63	32.14	41.20
Total	138.27	326.22	261.61
Cash expenses:			
Seed	6.18	8.44	8.09
Fertilizer	12.24	11.10	12.69
Chemicals	18.82	18.33	18.67
Custom operations	6.45	7.69	7.95
Fuel, lubrication, and electricity	20.06	23.33	24.01
Repairs	16.52	16.70	17.61
Hired labor	26.73	27.55	27.70
Purchased irrigation water	.24	.25	.24
Ginning	27.90	52.30	46.68
Technical services	2.40	2.42	2.40
Total, variable cash expenses	137.54	168.11	166.04
General farm overhead	12.60	12.31	13.04
Taxes and insurance	10.04	11.21	11.39
Interest on operating loans	19.04	13.39	11.85
Interest on real estate	13.96	11.32	10.48
Total, fixed cash expenses	55.64	48.23	46.76
Total, cash expenses	193.18	216.34	212.80
Net returns less cash expenses <u>3/</u>	-54.91	109.88	48.81
Capital replacement	42.26	42.82	45.17
Net returns less cash expenses and capital replacement	-97.17	67.06	3.64
Economic (full ownership) costs:			
Variable cash expenses	137.54	168.11	166.04
General farm overhead	12.60	12.31	13.04
Taxes and insurance	10.04	11.21	11.39
Capital replacement	42.26	42.82	45.17
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	3.35	3.89	4.37
Return to other nonland capital <u>5/</u>	7.14	8.03	9.64
Net land return <u>6/</u>	32.57	74.55	59.93
Unpaid labor	19.47	20.11	20.17
Total, economic costs	264.97	341.03	329.75
Residual returns to management and risk <u>7/</u>	-126.70	-14.81	-68.14
Harvest-month price (dollars per pound)	0.49	0.63	0.50
Yield (pounds per planted acre)	253.48	468.79	436.76

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 14--Cotton production costs and returns per planted acre,
Southwest, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	547.02	870.21	638.33
Secondary crop	93.80	101.13	121.05
Total	640.82	971.34	759.38
Cash expenses:			
Seed	8.41	8.76	9.51
Fertilizer	53.17	48.98	53.80
Lime and gypsum	.61	.61	.60
Chemicals	69.60	68.25	70.27
Custom operations	25.76	25.85	26.25
Fuel, lubrication, and electricity	41.37	44.88	48.19
Repairs	26.46	26.72	28.28
Hired labor	76.22	79.73	82.69
Purchased irrigation water	60.25	60.44	61.04
Ginning	107.56	122.56	98.98
Technical services	.68	.68	.68
Total, variable cash expenses	470.09	487.46	480.29
General farm overhead	59.03	57.76	61.61
Taxes and insurance	22.23	22.78	23.10
Interest on operating loans	34.60	24.52	22.02
Interest on real estate	61.00	49.25	45.21
Total, fixed cash expenses	176.86	154.31	151.94
Total, cash expenses	646.95	641.77	632.23
Net returns less cash expenses <u>3/</u>	-6.13	329.57	127.15
Capital replacement	68.46	69.06	72.83
Net returns less cash expenses and capital replacement	-74.59	260.51	54.32
Economic (full ownership) costs:			
Variable cash expenses	470.09	487.46	480.29
General farm overhead	59.03	57.76	61.61
Taxes and insurance	22.23	22.78	23.10
Capital replacement	68.46	69.06	72.83
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	11.07	12.47	14.89
Return to other nonland capital <u>5/</u>	11.43	12.84	15.45
Net land return <u>6/</u>	98.42	115.11	110.98
Unpaid labor	26.95	28.24	28.56
Total, economic costs	767.68	805.72	807.71
Residual returns to management and risk <u>7/</u>	-126.86	165.62	-48.33
Harvest-month price (dollars per pound)	0.49	0.69	0.61
Yield (pounds per planted acre)	1112.37	1270.18	1042.25

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 15--U.S. flaxseed production costs and returns per planted acre, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	58.86	49.98	44.70
Secondary crop	5.39	5.76	3.50
Total	64.25	55.74	48.20
=====			
Cash expenses:			
Seed	6.06	4.81	5.47
Fertilizer	3.07	2.79	3.25
Chemicals	4.50	4.45	4.48
Custom operations	.89	.74	.86
Fuel, lubrication, and electricity	5.14	6.60	5.36
Repairs	6.94	7.14	6.29
Hired labor	2.05	1.97	1.70
Miscellaneous	.61	.58	.28
Technical services	.10	.10	.10
Total, variable cash expenses	29.36	29.18	27.79
General farm overhead	3.40	4.27	3.43
Taxes and insurance	7.79	8.03	7.40
Interest on operating loans	3.40	2.31	1.73
Interest on real estate	3.97	4.68	3.15
Total, fixed cash expenses	18.56	19.29	15.71
Total, cash expenses	47.92	48.47	43.50
Net returns less cash expenses ^{2/}	16.33	7.27	4.70
Capital replacement	22.44	23.11	20.88
Net returns less cash expenses and capital replacement	-6.11	-15.84	-16.18
=====			
Economic (full ownership) costs:			
Variable cash expenses	29.36	29.18	27.79
General farm overhead	3.40	4.27	3.43
Taxes and insurance	7.79	8.03	7.40
Capital replacement	22.44	23.11	20.88
Allocated returns to owned inputs:			
Return to operating capital ^{3/}	.47	.50	.61
Return to other nonland capital ^{4/}	4.36	4.99	4.98
Net land return ^{5/}	14.62	12.63	11.42
Unpaid labor	8.75	8.42	7.24
Total, economic costs	91.19	91.13	83.75
Residual returns to management and risk ^{6/}	-26.94	-35.39	-35.55
=====			
Harvest-month price (dollars per bushel)	3.67	3.15	7.61
Yield (bushels per planted acre)	16.03	15.84	5.88
=====			

^{1/} Sum of operator and landlord costs and returns. ^{2/} Gross value of production less total cash expenses. ^{3/} Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. ^{4/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{5/} Rental value based on composite share and cash rent. ^{6/} Gross value of production less total economic costs.

Table 16--U.S. oats production costs and returns per planted acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	48.68	70.25	94.40
Secondary crop	20.26	22.98	28.03
Total	68.94	93.23	122.43
=====			
Cash expenses:			
Seed	5.49	6.97	9.04
Fertilizer	9.22	9.17	11.08
Lime and gypsum	1.71	1.79	1.83
Chemicals	1.35	1.32	1.33
Custom operations	2.48	2.42	3.25
Fuel, lubrication, and electricity	6.78	8.02	6.47
Repairs	7.59	7.65	6.40
Hired labor	1.89	1.91	1.67
Miscellaneous	.61	.51	.55
Technical services	.07	.07	.07
Total, variable cash expenses	37.19	39.83	41.69
General farm overhead	4.67	7.57	9.47
Taxes and insurance	15.88	15.81	14.26
Interest on operating loans	3.58	3.97	4.38
Interest on real estate	5.66	8.18	9.71
Total, fixed cash expenses	29.79	35.53	37.82
Total, cash expenses	66.98	75.36	79.51
Net returns less cash expenses <u>3/</u>	1.96	17.87	42.92
Capital replacement	27.45	27.59	20.39
Net returns less cash expenses and capital replacement	-25.49	-9.72	22.53
=====			
Economic (full ownership) costs:			
Variable cash expenses	37.19	39.83	41.69
General farm overhead	4.67	7.57	9.47
Taxes and insurance	15.88	15.81	14.26
Capital replacement	27.45	27.59	20.39
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	.60	.72	.92
Return to other nonland capital <u>5/</u>	5.98	6.68	5.56
Net land return <u>6/</u>	14.63	16.89	22.81
Unpaid labor	13.87	14.02	12.28
Total, economic costs	120.27	129.11	127.38
Residual returns to management and risk <u>7/</u>	-51.33	-35.88	-4.95
=====			
Harvest-month price (dollars per bushel)	0.86	1.30	2.66
Yield (bushels per planted acre)	56.78	53.98	35.44
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 17--Oats production costs and returns per planted acre,
Lake States and Corn Belt, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	52.52	75.50	106.14
Secondary crop	28.25	34.11	41.19
Total	80.77	109.61	147.33
=====			
Cash expenses:			
Seed	6.20	7.91	9.87
Fertilizer	10.11	10.33	12.28
Lime and gypsum	1.86	1.90	1.78
Chemicals	1.39	1.35	1.35
Custom operations	2.97	2.69	3.96
Fuel, lubrication, and electricity	7.85	9.30	7.42
Repairs	7.78	7.81	6.65
Hired labor	2.22	2.33	1.97
Miscellaneous	.71	.56	.65
Technical services	.09	.09	.08
Total, variable cash expenses	41.18	44.27	46.01
General farm overhead	4.93	8.35	10.74
Taxes and insurance	20.17	19.82	17.32
Interest on operating loans	4.61	4.62	5.42
Interest on real estate	7.10	9.47	13.16
Total, fixed cash expenses	36.81	42.26	46.64
Total, cash expenses	77.99	86.53	92.65
Net returns less cash expenses <u>3/</u>	2.78	23.08	54.68
Capital replacement	30.76	30.85	22.03
Net returns less cash expenses and capital replacement	-27.98	-7.77	32.65
=====			
Economic (full ownership) costs:			
Variable cash expenses	41.18	44.27	46.01
General farm overhead	4.93	8.35	10.74
Taxes and insurance	20.17	19.82	17.32
Capital replacement	30.76	30.85	22.03
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	.71	.85	1.05
Return to other nonland capital <u>5/</u>	6.85	7.64	6.13
Net land return <u>6/</u>	18.17	19.71	28.32
Unpaid labor	16.28	17.11	14.44
Total, economic costs	139.05	148.60	146.04
Residual returns to management and risk <u>7/</u>	-58.28	-38.99	1.29
=====			
Harvest-month price (dollars per bushel)	0.87	1.30	2.74
Yield (bushels per planted acre)	60.68	57.90	38.68
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 18--Oats production costs and returns per planted acre, Northeast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	53.42	73.83	115.79
Secondary crop	38.43	34.78	37.86
Total	91.85	108.61	153.65
=====			
Cash expenses:			
Seed	7.63	10.14	12.49
Fertilizer	17.63	17.06	20.41
Lime and gypsum	9.82	10.70	10.10
Chemicals	3.20	3.15	3.06
Custom operations	5.34	5.24	5.77
Fuel, lubrication, and electricity	8.98	9.59	8.71
Repairs	9.69	9.77	8.70
Hired labor	2.59	2.55	2.53
Miscellaneous	1.25	1.09	.88
Technical services	.16	.17	.15
Total, variable cash expenses	66.29	69.46	72.80
General farm overhead	13.71	14.08	18.28
Taxes and insurance	21.38	21.93	20.13
Interest on operating loans	2.02	5.30	4.58
Interest on real estate	9.69	10.95	8.57
Total, fixed cash expenses	46.80	52.26	51.56
Total, cash expenses	113.09	121.72	124.36
Net returns less cash expenses <u>3/</u>	-21.24	-13.11	29.29
Capital replacement	37.59	37.92	31.34
Net returns less cash expenses and capital replacement	-58.83	-51.03	-2.05
=====			
Economic (full ownership) costs:			
Variable cash expenses	66.29	69.46	72.80
General farm overhead	13.71	14.08	18.28
Taxes and insurance	21.38	21.93	20.13
Capital replacement	37.59	37.92	31.34
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.09	1.28	1.65
Return to other nonland capital <u>5/</u>	8.52	9.56	8.94
Net land return <u>6/</u>	6.61	8.02	10.61
Unpaid labor	19.02	18.67	18.58
Total, economic costs	174.21	180.92	182.33
Residual returns to management and risk <u>7/</u>	-82.36	-72.31	-28.68
=====			
Harvest-month price (dollars per bushel)	0.83	1.27	2.28
Yield (bushels per planted acre)	64.53	58.30	50.72
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 19--Oats production costs and returns per planted acre,
Northern Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	42.90	63.05	72.57
Secondary crop	6.71	6.90	6.81
Total	49.61	69.95	79.38
=====			
Cash expenses:			
Seed	4.19	5.21	7.07
Fertilizer	6.54	6.27	7.19
Chemicals	.95	.96	.92
Custom operations	1.31	1.56	1.63
Fuel, lubrication, and electricity	5.00	6.13	4.57
Repairs	6.95	7.05	5.50
Hired labor	1.34	1.27	1.05
Miscellaneous	.36	.34	.35
Technical services	.03	.02	.02
Total, variable cash expenses	26.67	28.81	28.30
General farm overhead	2.65	5.38	5.60
Taxes and insurance	9.40	9.68	8.50
Interest on operating loans	2.57	2.91	2.84
Interest on real estate	3.06	6.07	4.99
Total, fixed cash expenses	17.68	24.04	21.93
Total, cash expenses	44.35	52.85	50.23
Net returns less cash expenses <u>3/</u>	5.26	17.10	29.15
Capital replacement	21.33	21.62	15.50
Net returns less cash expenses and capital replacement	-16.07	-4.52	13.65
=====			
Economic (full ownership) costs:			
Variable cash expenses	26.67	28.81	28.30
General farm overhead	2.65	5.38	5.60
Taxes and insurance	9.40	9.68	8.50
Capital replacement	21.33	21.62	15.50
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	.38	.44	.57
Return to other nonland capital <u>5/</u>	4.40	4.96	3.97
Net land return <u>6/</u>	11.63	15.02	17.67
Unpaid labor	9.85	9.30	7.70
Total, economic costs	86.31	95.21	87.81
Residual returns to management and risk <u>7/</u>	-36.70	-25.26	-8.43
=====			
Harvest-month price (dollars per bushel)	0.85	1.31	2.66
Yield (bushels per planted acre)	50.37	48.28	27.27
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 20--U.S. peanut production costs and returns per planted acre, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	680.57	644.85	648.95
Secondary crop	9.21	10.66	13.70
Total	689.78	655.51	662.65
Cash expenses:			
Seed	63.58	79.70	73.39
Fertilizer	16.50	16.28	20.05
Lime and gypsum	10.98	10.21	10.54
Chemicals	74.01	71.45	72.86
Custom operations	8.56	8.53	8.86
Fuel, lubrication, and electricity	27.85	34.08	33.82
Repairs	18.63	18.82	19.82
Hired labor	28.81	31.28	32.62
Custom drying	24.42	24.12	24.88
Technical services	.77	.77	.77
Total, variable cash expenses	274.11	295.24	297.61
General farm overhead	32.81	31.67	33.71
Taxes and insurance	12.59	13.17	13.36
Interest on operating loans	29.01	20.33	17.95
Interest on real estate	38.56	30.56	28.57
Total, fixed cash expenses	112.97	95.73	93.59
Total, cash expenses	387.08	390.97	391.20
Net returns less cash expenses ^{2/}	302.70	264.54	271.45
Capital replacement	48.42	48.89	51.51
Net returns less cash expenses and capital replacement	254.28	215.65	219.94
Economic (full ownership) costs:			
Variable cash expenses	274.11	295.24	297.61
General farm overhead	32.81	31.67	33.71
Taxes and insurance	12.59	13.17	13.36
Capital replacement	48.42	48.89	51.51
Allocated returns to owned inputs:			
Return to operating capital ^{3/}	5.95	7.16	8.23
Return to other nonland capital ^{4/}	9.78	11.00	13.18
Net land return ^{5/}	65.07	60.63	62.41
Return to peanut quota ^{6/}	112.96	111.70	113.79
Unpaid labor	35.96	38.13	39.50
Total, economic costs	597.65	617.59	633.30
Residual returns to management and risk ^{7/}	92.13	37.92	29.35
Harvest-month price (dollars per pound)	0.29	0.28	0.27
Yield (pounds per planted acre)	2354.78	2305.46	2402.36

^{1/} Sum of operator and landlord costs and returns. ^{2/} Gross value of production less total cash expenses. ^{3/} Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. ^{4/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{5/} Rental value based on composite share and cash rent. ^{6/} Rental value of peanut quota. ^{7/} Gross value of production less total economic costs.

Table 21--Peanut production costs and returns per planted acre,
Southeast, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	673.03	675.26	670.04
Secondary crop	9.35	10.57	14.36
Total	682.38	685.83	684.40
=====			
Cash expenses:			
Seed	67.08	86.27	74.95
Fertilizer	18.21	18.31	22.65
Lime and gypsum	12.19	11.23	11.70
Chemicals	80.13	78.23	79.48
Custom operations	8.91	8.96	9.35
Fuel, lubrication, and electricity	25.41	33.25	32.33
Repairs	17.69	17.87	18.92
Hired labor	28.03	29.35	31.26
Custom drying	23.27	22.93	24.35
Technical services	.77	.77	.77
Total, variable cash expenses	281.69	307.17	305.76
General farm overhead	35.07	34.09	36.17
Taxes and insurance	12.24	12.75	13.00
Interest on operating loans	28.28	19.74	17.84
Interest on real estate	46.45	37.52	34.81
Total, fixed cash expenses	122.04	104.10	101.82
Total, cash expenses	403.73	411.27	407.58
Net returns less cash expenses <u>2/</u>	278.65	274.56	276.82
Capital replacement	47.36	47.89	50.68
Net returns less cash expenses and capital replacement	231.29	226.67	226.14
=====			
Economic (full ownership) costs:			
Variable cash expenses	281.69	307.17	305.76
General farm overhead	35.07	34.09	36.17
Taxes and insurance	12.24	12.75	13.00
Capital replacement	47.36	47.89	50.68
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	6.41	7.82	9.19
Return to other nonland capital <u>4/</u>	9.30	10.47	12.62
Net land return <u>5/</u>	50.42	47.52	50.59
Return to peanut quota <u>6/</u>	120.72	120.00	122.46
Unpaid labor	32.41	34.01	36.07
Total, economic costs	595.62	621.72	636.54
Residual returns to management and risk <u>7/</u>	86.76	64.11	47.86
=====			
Harvest-month price (dollars per pound)	0.28	0.28	0.26
Yield (pounds per planted acre)	2384.96	2382.34	2528.60
=====			

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value based on composite share and cash rent. 6/ Rental value of peanut quota. 7/ Gross value of production less total economic costs.

Table 22--Peanut production costs and returns per planted acre,
Southern Plains, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	545.46	502.27	498.64
Secondary crop	8.45	10.73	10.99
Total	553.91	513.00	509.63
Cash expenses:			
Seed	45.10	57.43	49.69
Fertilizer	16.33	15.44	18.21
Lime and gypsum	.61	.63	.56
Chemicals	43.07	41.81	42.42
Custom operations	7.61	7.87	7.95
Fuel, lubrication, and electricity	31.55	34.08	34.78
Repairs	20.91	21.28	22.19
Hired labor	25.04	30.07	30.11
Custom drying	26.17	27.88	26.80
Technical services	.61	.62	.62
Total, variable cash expenses	217.00	237.11	233.33
General farm overhead	21.01	20.33	21.50
Taxes and insurance	10.41	11.33	11.33
Interest on operating loans	33.65	23.45	20.66
Interest on real estate	23.08	18.02	16.54
Total, fixed cash expenses	88.15	73.13	70.03
Total, cash expenses	305.15	310.24	303.36
Net returns less cash expenses <u>2/</u>	248.76	202.76	206.27
Capital replacement	45.35	46.30	48.12
Net returns less cash expenses and capital replacement	203.41	156.46	158.15
Economic (full ownership) costs:			
Variable cash expenses	217.00	237.11	233.33
General farm overhead	21.01	20.33	21.50
Taxes and insurance	10.41	11.33	11.33
Capital replacement	45.35	46.30	48.12
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	4.31	5.22	5.87
Return to other nonland capital <u>4/</u>	9.33	10.64	12.56
Net land return <u>5/</u>	87.52	82.27	81.34
Return to peanut quota <u>6/</u>	93.69	92.50	93.36
Unpaid labor	46.87	48.57	48.69
Total, economic costs	535.45	554.27	556.10
Residual returns to management and risk <u>7/</u>	18.46	-41.27	-46.47
Harvest-month price (dollars per pound)	0.31	0.27	0.28
Yield (pounds per planted acre)	1752.30	1874.99	1789.82

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value based on composite share and cash rent. 6/ Rental value of peanut quota. 7/ Gross value of production less total economic costs.

Table 23--Peanut production costs and returns per planted acre,
Virginia and North Carolina, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	900.76	734.81	779.92
Secondary crop	9.66	10.95	14.90
Total	910.42	745.76	794.82
=====			
Cash expenses:			
Seed	74.12	86.56	101.35
Fertilizer	9.40	9.49	11.90
Lime and gypsum	20.14	20.27	20.17
Chemicals	90.59	88.35	89.59
Custom operations	8.34	7.78	8.17
Fuel, lubrication, and electricity	33.22	37.32	38.66
Repairs	19.52	18.98	20.15
Hired labor	37.38	40.62	41.94
Drying	26.95	23.28	24.32
Technical services	1.00	1.01	1.01
Total, variable cash expenses	320.66	333.66	357.26
General farm overhead	39.65	38.78	41.23
Taxes and insurance	17.17	17.54	17.83
Interest on operating loans	25.66	18.06	15.94
Interest on real estate	26.69	21.67	20.18
Total, fixed cash expenses	109.17	96.05	95.18
Total, cash expenses	429.83	429.71	452.44
Net returns less cash expenses <u>2/</u>	480.59	316.05	342.38
Capital replacement	57.28	56.60	59.86
Net returns less cash expenses and capital replacement	423.31	259.45	282.52
=====			
Economic (full ownership) costs:			
Variable cash expenses	320.66	333.66	357.26
General farm overhead	39.65	38.78	41.23
Taxes and insurance	17.17	17.54	17.83
Capital replacement	57.28	56.60	59.86
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	6.25	7.42	9.10
Return to other nonland capital <u>4/</u>	12.45	13.62	16.41
Net land return <u>5/</u>	97.18	80.36	81.60
Return to peanut quota <u>6/</u>	106.61	106.18	107.48
Unpaid labor	35.84	38.99	40.40
Total, economic costs	693.09	693.15	731.17
Residual returns to management and risk <u>7/</u>	217.33	52.61	63.65
=====			
Harvest-month price (dollars per pound)	0.29	0.28	0.28
Yield (pounds per planted acre)	3061.27	2635.69	2768.79

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value based on composite share and cash rent. 6/ Rental value of peanut quota. 7/ Gross value of production less total economic costs.

Table 24--U.S. rice production costs and returns per planted acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	218.41	263.89	370.33
Total	218.41	263.89	370.33
Cash expenses:			
Seed	19.89	21.01	22.16
Fertilizer	35.34	30.96	36.28
Chemicals	42.06	39.06	40.30
Custom operations	36.52	35.49	36.58
Fuel, lubrication, and electricity	37.53	47.10	46.93
Repairs	22.24	23.34	24.49
Hired labor	39.34	39.09	39.36
Purchased irrigation water	9.12	8.30	8.28
Drying	43.32	39.08	39.92
Miscellaneous	1.29	1.29	1.31
Technical services	.56	.47	.48
Total, variable cash expenses	287.21	285.19	296.09
General farm overhead	20.77	20.28	21.50
Taxes and insurance	11.24	12.02	12.13
Interest on operating loans	22.56	15.89	14.04
Interest on real estate	12.54	10.16	9.42
Total, fixed cash expenses	67.11	58.35	57.09
Total, cash expenses	354.32	343.54	353.18
Net returns less cash expenses <u>3/</u>	-135.91	-79.65	17.15
Capital replacement	40.69	44.27	46.34
Net returns less cash expenses and capital replacement	-176.60	-123.92	-29.19
Economic (full ownership) costs:			
Variable cash expenses	287.21	285.19	296.09
General farm overhead	20.77	20.28	21.50
Taxes and insurance	11.24	12.02	12.13
Capital replacement	40.69	44.27	46.34
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	5.01	5.64	6.68
Return to other nonland capital <u>5/</u>	7.65	9.08	10.86
Net land return <u>6/</u>	25.59	34.04	57.84
Unpaid labor	23.20	23.54	23.70
Total, economic costs	421.36	434.06	475.14
Residual returns to management and risk <u>7/</u>	-202.95	-170.17	-104.81
Harvest-month price (dollars per hundredweight)	3.83	4.83	6.78
Yield (hundredweight per planted acre)	56.97	54.67	54.61

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 25--Rice production costs and returns per planted acre,
Arkansas (non-Delta), 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	208.79	263.71	365.34
Total	208.79	263.71	365.34
=====			
Cash expenses:			
Seed	18.72	19.98	20.24
Fertilizer	31.39	27.50	32.02
Chemicals	32.67	31.90	32.41
Custom operations	29.47	29.67	30.48
Fuel, lubrication, and electricity	38.23	50.77	48.82
Repairs	28.10	28.33	29.81
Hired labor	35.18	34.94	34.94
Drying	33.99	32.70	33.16
Miscellaneous	1.33	1.33	1.33
Technical services	.15	.15	.15
Total, variable cash expenses	249.23	257.27	263.36
General farm overhead	16.61	16.22	17.19
Taxes and insurance	12.74	13.29	13.50
Interest on operating loans	18.01	12.69	11.21
Interest on real estate	15.01	12.15	11.27
Total, fixed cash expenses	62.37	54.35	53.17
Total, cash expenses	311.60	311.62	316.53
Net returns less cash expenses <u>3/</u>	-102.81	-47.91	48.81
Capital replacement	60.45	60.94	64.14
Net returns less cash expenses and capital replacement	-163.26	-108.85	-15.33
=====			
Economic (full ownership) costs:			
Variable cash expenses	249.23	257.27	263.36
General farm overhead	16.61	16.22	17.19
Taxes and insurance	12.74	13.29	13.50
Capital replacement	60.45	60.94	64.14
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	4.59	5.26	6.16
Return to other nonland capital <u>5/</u>	10.59	11.88	14.22
Net land return <u>6/</u>	15.80	28.65	56.15
Unpaid labor	16.30	16.19	16.19
Total, economic costs	386.31	409.70	450.91
Residual returns to management and risk <u>7/</u>	-177.52	-145.99	-85.57
=====			
Harvest-month price (dollars per hundredweight)	3.87	4.92	6.83
Yield (hundredweight per planted acre)	53.95	53.60	53.49
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 26--Rice production costs and returns per planted acre,
California, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	281.84	316.19	444.10
Total	281.84	316.19	444.10
=====			
Cash expenses:			
Seed	21.09	21.59	21.93
Fertilizer	37.26	34.37	36.83
Chemicals	49.12	47.96	48.74
Custom operations	47.20	47.51	48.82
Fuel, lubrication, and electricity	43.49	47.51	48.13
Repairs	20.57	20.58	21.57
Hired labor	41.37	44.08	44.92
Purchased irrigation water	21.51	21.73	21.95
Drying	53.47	47.89	47.88
Miscellaneous	1.41	1.41	1.41
Technical services	1.15	1.15	1.15
Total, variable cash expenses	337.64	335.78	343.33
General farm overhead	35.78	34.93	37.03
Taxes and insurance	14.50	14.65	14.85
Interest on operating loans	38.50	27.11	23.96
Interest on real estate	30.03	24.32	22.55
Total, fixed cash expenses	118.81	101.01	98.39
Total, cash expenses	456.45	436.79	441.72
Net returns less cash expenses <u>3/</u>	-174.61	-120.60	2.38
Capital replacement	30.70	30.71	32.20
Net returns less cash expenses and capital replacement	-205.31	-151.31	-29.82
=====			
Economic (full ownership) costs:			
Variable cash expenses	337.64	335.78	343.33
General farm overhead	35.78	34.93	37.03
Taxes and insurance	14.50	14.65	14.85
Capital replacement	30.70	30.71	32.20
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	6.36	7.22	8.48
Return to other nonland capital <u>5/</u>	5.95	6.61	7.88
Net land return <u>6/</u>	72.03	81.68	106.60
Unpaid labor	42.25	44.21	45.27
Total, economic costs	545.21	555.79	595.64
Residual returns to management and risk <u>7/</u>	-263.37	-239.60	-151.54
=====			
Harvest-month price (dollars per hundredweight)	3.69	4.49	6.40
Yield (hundredweight per planted acre)	76.38	70.42	69.39
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 27--Rice production costs and returns per planted acre, Delta, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	202.77	239.94	350.13
Total	202.77	239.94	350.13
=====			
Cash expenses:			
Seed	17.83	19.01	21.25
Fertilizer	31.57	26.00	32.92
Chemicals	46.46	45.38	46.10
Custom operations	37.67	37.93	38.97
Fuel, lubrication, and electricity	29.37	39.75	43.43
Repairs	22.00	21.84	23.29
Hired labor	38.88	38.62	38.62
Purchased irrigation water	.43	.44	.44
Drying	39.93	36.13	38.51
Miscellaneous	1.31	1.31	1.31
Technical services	.85	.85	.85
Total, variable cash expenses	266.30	267.26	285.69
General farm overhead	19.55	19.08	20.23
Taxes and insurance	10.70	10.83	11.09
Interest on operating loans	17.87	12.58	11.12
Interest on real estate	6.24	5.06	4.69
Total, fixed cash expenses	54.36	47.55	47.13
Total, cash expenses	320.66	314.81	332.82
Net returns less cash expenses <u>3/</u>	-117.89	-74.87	17.31
Capital replacement	40.29	40.19	42.67
Net returns less cash expenses and capital replacement	-158.18	-115.06	-25.36
=====			
Economic (full ownership) costs:			
Variable cash expenses	266.30	267.26	285.69
General farm overhead	19.55	19.08	20.23
Taxes and insurance	10.70	10.83	11.09
Capital replacement	40.29	40.19	42.67
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	4.79	5.42	6.58
Return to other nonland capital <u>5/</u>	7.81	8.65	10.64
Net land return <u>6/</u>	21.68	25.83	49.88
Unpaid labor	14.75	14.65	14.65
Total, economic costs	385.87	391.91	441.25
Residual returns to management and risk <u>7/</u>	-183.10	-151.97	-91.12
=====			
Harvest-month price (dollars per hundredweight)	3.91	4.98	6.91
Yield (hundredweight per planted acre)	51.86	48.81	50.67
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 28--Rice production costs and returns per planted acre,
Gulf Coast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	203.13	247.68	354.35
Total	203.13	247.68	354.35
=====			
Cash expenses:			
Seed	21.90	23.23	25.23
Fertilizer	40.36	36.42	43.59
Chemicals	40.08	38.80	40.05
Custom operations	33.96	34.08	35.15
Fuel, lubrication, and electricity	41.33	46.83	47.08
Repairs	19.58	19.62	20.98
Hired labor	41.34	41.62	42.11
Purchased irrigation water	16.17	15.69	17.06
Drying	46.80	43.70	44.60
Miscellaneous	1.17	1.14	1.22
Technical services	.22	.21	.22
Total, variable cash expenses	302.91	301.34	317.29
General farm overhead	18.72	18.27	19.37
Taxes and insurance	8.89	9.58	10.01
Interest on operating loans	23.28	16.40	14.49
Interest on real estate	5.86	4.74	4.40
Total, fixed cash expenses	56.75	48.99	48.27
Total, cash expenses	359.66	350.33	365.56
Net returns less cash expenses <u>3/</u>	-156.53	-102.65	-11.21
Capital replacement	33.84	33.90	36.59
Net returns less cash expenses and capital replacement	-190.37	-136.55	-47.80
=====			
Economic (full ownership) costs:			
Variable cash expenses	302.91	301.34	317.29
General farm overhead	18.72	18.27	19.37
Taxes and insurance	8.89	9.58	10.01
Capital replacement	33.84	33.90	36.59
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	4.71	5.31	6.40
Return to other nonland capital <u>5/</u>	6.55	7.29	8.95
Net land return <u>6/</u>	9.11	17.30	40.97
Unpaid labor	27.95	28.32	28.35
Total, economic costs	412.68	421.31	467.93
Residual returns to management and risk <u>7/</u>	-209.55	-173.63	-113.58
=====			
Harvest-month price (dollars per hundredweight)	3.86	4.89	6.89
Yield (hundredweight per planted acre)	52.65	50.63	51.45
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 29--U.S. grain sorghum production costs and returns
per planted acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary product	91.57	96.18	148.43
Total	91.57	96.18	148.43
Cash expenses:			
Seed	3.80	4.74	3.59
Fertilizer	17.65	15.33	17.22
Chemicals	9.73	10.11	10.26
Custom operations	3.94	3.93	4.01
Fuel, lubrication, and electricity	9.33	10.62	10.63
Repairs	7.62	7.72	7.93
Hired labor	2.54	2.47	2.50
Purchased irrigation water	.13	.11	.11
Drying	.70	.61	.56
Technical services	.06	.06	.07
Total, variable cash expenses	55.50	55.70	56.88
General farm overhead	6.01	6.83	9.85
Taxes and insurance	7.92	8.32	8.46
Interest on operating loans	5.51	4.39	5.46
Interest on real estate	5.95	6.93	8.15
Total, fixed cash expenses	25.39	26.47	31.92
Total, cash expenses	80.89	82.17	88.80
Net returns less cash expenses <u>3/</u>	10.68	14.01	59.63
Capital replacement	23.04	23.13	23.91
Net returns less cash expenses and capital replacement	-12.36	-9.12	35.72
Economic (full ownership) costs:			
Variable cash expenses	55.50	55.70	56.88
General farm overhead	6.01	6.83	9.85
Taxes and insurance	7.92	8.32	8.46
Capital replacement	23.04	23.13	23.91
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.32	1.47	1.73
Return to other nonland capital <u>5/</u>	4.19	4.74	5.54
Net land return <u>6/</u>	25.51	26.47	38.67
Unpaid labor	10.17	9.88	10.01
Total, economic costs	133.66	136.54	155.05
Residual returns to management and risk <u>7/</u>	-42.09	-40.36	-6.62
Harvest-month price (dollars per bushel)	1.37	1.40	2.39
Yield (bushels per planted acre)	66.91	68.62	62.13

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 30--Grain sorghum production costs and returns per planted acre,
Central Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	94.60	98.65	146.24
Total	94.60	98.65	146.24
=====			
Cash expenses:			
Seed	3.55	3.78	3.39
Fertilizer	18.02	15.71	17.52
Chemicals	11.80	11.95	12.03
Custom operations	2.85	2.94	3.07
Fuel, lubrication, and electricity	7.01	8.29	8.38
Repairs	7.09	7.25	7.43
Hired labor	2.04	1.96	2.05
Drying	1.01	.82	.72
Technical services	.08	.09	.09
Total, variable cash expenses	53.45	52.79	54.68
General farm overhead	4.86	7.30	10.07
Taxes and insurance	9.03	9.31	9.42
Interest on operating loans	4.76	3.98	5.04
Interest on real estate	5.94	8.15	9.18
Total, fixed cash expenses	24.59	28.74	33.71
Total, cash expenses	78.04	81.53	88.39
Net returns less cash expenses <u>3/</u>	16.56	17.12	57.85
Capital replacement	22.68	22.70	23.42
Net returns less cash expenses and capital replacement	-6.12	-5.58	34.43
=====			
Economic (full ownership) costs:			
Variable cash expenses	53.45	52.79	54.68
General farm overhead	4.86	7.30	10.07
Taxes and insurance	9.03	9.31	9.42
Capital replacement	22.68	22.70	23.42
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.31	1.43	1.72
Return to other nonland capital <u>5/</u>	4.30	4.82	5.60
Net land return <u>6/</u>	26.32	27.14	38.20
Unpaid labor	8.17	7.84	8.22
Total, economic costs	130.12	133.33	151.33
Residual returns to management and risk <u>7/</u>	-35.52	-34.68	-5.09
=====			
Harvest-month price (dollars per bushel)	1.26	1.36	2.30
Yield (bushels per planted acre)	75.28	72.69	63.49
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 31--Grain sorghum production costs and returns per planted acre,
Southern Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	86.95	91.48	152.96
Total	86.95	91.48	152.96
=====			
Cash expenses:			
Seed	4.18	6.58	4.00
Fertilizer	17.07	14.62	16.60
Chemicals	6.58	6.60	6.59
Custom operations	5.60	5.80	5.96
Fuel, lubrication, and electricity	12.87	15.06	15.28
Repairs	8.42	8.61	8.98
Hired labor	3.30	3.44	3.43
Purchased irrigation water	.34	.34	.34
Drying	.21	.23	.22
Technical services	.02	.02	.02
Total, variable cash expenses	58.59	61.30	61.42
General farm overhead	7.78	5.92	9.39
Taxes and insurance	6.21	6.43	6.47
Interest on operating loans	6.67	5.16	6.32
Interest on real estate	5.97	4.61	6.02
Total, fixed cash expenses	26.63	22.12	28.20
Total, cash expenses	85.22	83.42	89.62
Net returns less cash expenses <u>3/</u>	1.73	8.00	63.34
Capital replacement	26.60	23.95	24.93
Net returns less cash expenses and capital replacement	-21.87	-15.89	38.41
=====			
Economic (full ownership) costs:			
Variable cash expenses	58.59	61.30	61.42
General farm overhead	7.78	5.92	9.39
Taxes and insurance	6.21	6.43	6.47
Capital replacement	23.60	23.95	24.93
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.33	1.54	1.76
Return to other nonland capital <u>5/</u>	4.03	4.59	5.42
Net land return <u>6/</u>	24.29	25.19	39.63
Unpaid labor	13.21	13.78	13.71
Total, economic costs	139.04	142.70	162.73
Residual returns to management and risk <u>7/</u>	-52.09	-51.22	-9.77
=====			
Harvest-month price (dollars per bushel)	1.61	1.50	2.58
Yield (bushels per planted acre)	54.15	60.87	59.31
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 32--U.S. soybean production costs and returns per planted acre, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	150.64	171.66	200.25
Total	150.64	171.66	200.25
=====			
Cash expenses:			
Seed	10.82	11.16	11.91
Fertilizer	5.01	5.00	6.32
Lime and gypsum	.34	.29	.30
Chemicals	12.37	12.34	12.34
Custom operations	4.01	3.98	4.04
Fuel, lubrication, and electricity	7.39	8.97	9.12
Repairs	6.56	6.63	7.29
Hired labor	2.53	2.62	2.80
Technical services	.05	.05	.05
Total, variable cash expenses	49.08	51.04	54.17
General farm overhead	7.87	10.81	12.37
Taxes and insurance	13.46	13.94	14.35
Interest on operating loans	6.79	6.48	5.90
Interest on real estate	11.37	12.54	13.22
Total, fixed cash expenses	39.49	43.77	45.84
Total, cash expenses	88.57	94.81	100.01
Net returns less cash expenses ^{2/}	62.07	76.85	100.24
Capital replacement	31.48	31.84	34.01
Net returns less cash expenses and capital replacement	30.59	45.01	66.23
=====			
Economic (full ownership) costs:			
Variable cash expenses	49.08	51.04	54.17
General farm overhead	7.87	10.81	12.37
Taxes and insurance	13.46	13.94	14.35
Capital replacement	31.48	31.84	34.01
Allocated returns to owned inputs:			
Return to operating capital ^{3/}	1.08	1.24	1.51
Return to other nonland capital ^{4/}	5.07	5.72	7.01
Net land return ^{5/}	43.63	45.56	51.89
Unpaid labor	9.53	9.86	10.55
Total, economic costs	161.21	170.01	185.86
Residual returns to management and risk ^{6/}	-10.57	1.65	14.39
=====			
Harvest-month price (dollars per bushel)	4.57	5.07	7.53
Yield (bushels per planted acre)	32.94	33.83	26.60
=====			

^{1/} Sum of operator and landlord costs and returns. ^{2/} Gross value of production less total cash expenses. ^{3/} Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. ^{4/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{5/} Rental value based on composite share and cash rent. ^{6/} Gross value of production less total economic costs.

Table 33--Soybean production costs and returns per planted acre, Delta, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	88.26	115.91	178.48
Total	88.26	115.91	178.48
=====			
Cash expenses:			
Seed	9.31	10.10	10.75
Fertilizer	6.06	6.04	7.88
Chemicals	8.53	8.51	8.54
Custom operations	2.30	2.35	2.36
Fuel, lubrication, and electricity	7.40	9.63	9.76
Repairs	6.72	7.00	7.48
Hired labor	2.49	2.53	2.54
Technical services	.05	.05	.05
Total, variable cash expenses	42.86	45.94	49.36
General farm overhead	6.94	6.93	9.75
Taxes and insurance	7.94	8.30	8.52
Interest on operating loans	5.08	6.09	4.84
Interest on real estate	5.06	5.07	4.78
Total, fixed cash expenses	25.02	26.39	27.89
Total, cash expenses	67.88	72.33	77.25
Net returns less cash expenses <u>2/</u>	20.38	43.58	101.33
Capital replacement	27.94	28.66	30.48
Net returns less cash expenses and capital replacement	-7.56	14.92	70.75
=====			
Economic (full ownership) costs:			
Variable cash expenses	42.86	45.94	49.36
General farm overhead	6.94	6.93	9.75
Taxes and insurance	7.94	8.30	8.52
Capital replacement	27.94	28.66	30.48
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.08	1.28	1.54
Return to other nonland capital <u>4/</u>	4.73	5.45	6.62
Net land return <u>5/</u>	20.06	23.59	34.99
Unpaid labor	9.38	9.52	9.55
Total, economic costs	120.93	129.97	150.81
Residual returns to management and risk <u>6/</u>	-32.67	-13.76	27.67
=====			
Harvest-month price (dollars per bushel)	4.88	5.54	7.47
Yield (bushels per planted acre)	18.10	20.93	23.90
=====			

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value based on composite share and cash rent. 6/ Gross value of production less total economic costs.

Table 34--Soybean production costs and returns per planted acre,
North-Central, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	170.43	190.44	206.80
Total	170.43	190.44	206.80
Cash expenses:			
Seed	11.27	11.58	12.49
Fertilizer	3.90	4.03	4.97
Lime and gypsum	.14	.14	.15
Chemicals	12.90	12.91	12.88
Custom operations	4.11	4.08	4.13
Fuel, lubrication, and electricity	7.42	8.85	9.00
Repairs	6.30	6.31	6.99
Hired labor	2.50	2.59	2.80
Technical services	.05	.05	.06
Total, variable cash expenses	48.59	50.54	53.47
General farm overhead	8.59	12.17	13.18
Taxes and insurance	15.64	15.99	16.57
Interest on operating loans	7.46	6.96	6.41
Interest on real estate	13.50	14.82	15.33
Total, fixed cash expenses	45.19	49.94	51.49
Total, cash expenses	93.78	100.48	104.96
Net returns less cash expenses <u>2/</u>	76.65	89.96	101.84
Capital replacement	33.45	33.40	35.83
Net returns less cash expenses and capital replacement	43.20	56.56	66.01
Economic (full ownership) costs:			
Variable cash expenses	48.59	50.54	53.47
General farm overhead	8.59	12.17	13.18
Taxes and insurance	15.64	15.99	16.57
Capital replacement	33.45	33.40	35.83
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	1.03	1.19	1.43
Return to other nonland capital <u>4/</u>	5.32	5.91	7.30
Net land return <u>5/</u>	51.81	53.20	58.58
Unpaid labor	9.41	9.73	10.52
Total, economic costs	173.84	182.13	196.88
Residual returns to management and risk <u>6/</u>	-3.41	8.31	9.92
Harvest-month price (dollars per bushel)	4.52	5.00	7.54
Yield (bushels per planted acre)	37.74	38.08	27.41

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value based on composite share and cash rent. 6/ Gross value of production less total economic costs.

Table 35--Soybean production costs and returns per planted acre, Southeast, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	107.55	116.58	186.14
Total	107.55	116.58	186.14
Cash expenses:			
Seed	9.90	9.71	9.57
Fertilizer	10.70	10.59	13.33
Lime and gypsum	1.96	1.83	1.79
Chemicals	14.04	13.86	14.04
Custom operations	5.65	5.71	5.86
Fuel, lubrication, and electricity	7.21	8.85	9.03
Repairs	7.98	8.47	9.11
Hired labor	2.79	3.01	3.22
Total, variable cash expenses	60.23	62.03	65.95
General farm overhead	4.58	6.53	10.50
Taxes and insurance	6.92	7.25	7.42
Interest on operating loans	4.80	3.55	3.93
Interest on real estate	6.24	6.91	10.64
Total, fixed cash expenses	22.54	24.24	32.49
Total, cash expenses	82.77	86.27	98.44
Net returns less cash expenses ^{2/}	24.78	30.31	87.70
Capital replacement	23.81	25.05	26.61
Net returns less cash expenses and capital replacement	.97	5.26	61.09
Economic (full ownership) costs:			
Variable cash expenses	60.23	62.03	65.95
General farm overhead	4.58	6.53	10.50
Taxes and insurance	6.92	7.25	7.42
Capital replacement	23.81	25.05	26.61
Allocated returns to owned inputs:			
Return to operating capital ^{3/}	1.43	1.60	1.95
Return to other nonland capital ^{4/}	3.96	4.65	5.63
Net land return ^{5/}	23.00	22.05	30.00
Unpaid labor	10.51	11.33	12.11
Total, economic costs	134.44	140.49	160.17
Residual returns to management and risk ^{6/}	-26.89	-23.91	25.97
Harvest-month price (dollars per bushel)	4.86	5.36	7.50
Yield (bushels per planted acre)	22.13	21.73	24.81

^{1/} Sum of operator and landlord costs and returns. ^{2/} Gross value of production less total cash expenses. ^{3/} Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. ^{4/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{5/} Rental value based on composite share and cash rent. ^{6/} Gross value of production less total economic costs.

Table 36--U.S. sugar-beet production costs and returns per planted acre, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	730.93	851.86	786.92
Secondary crop	.95	.95	1.06
Total	731.88	852.81	787.98
=====			
Cash expenses:			
Seed	22.98	23.52	31.01
Fertilizer	41.55	39.88	55.02
Chemicals	43.80	42.46	59.52
Custom operations	33.84	34.76	43.89
Fuel, lubrication, and electricity	41.74	41.74	40.94
Repairs	34.82	35.00	38.97
Hired labor	48.79	50.26	96.93
Noncash benefits	N/A	N/A	2.86
Purchased irrigation water ^{2/}	6.32	6.84	7.07
Freight and dirt-hauling charges	N/A	N/A	10.32
Miscellaneous	.38	.38	2.55
Hauling allowance	N/A	N/A	-10.92
Total, variable cash expenses	274.22	274.84	378.16
General farm overhead	46.07	51.49	46.14
Taxes and insurance	18.29	18.96	36.12
Interest	72.08	78.29	66.83
Total, fixed cash expenses	136.44	148.74	149.09
Total, cash expenses	410.66	423.58	527.25
Net returns less cash expenses ^{3/}	321.22	429.23	260.73
Capital replacement	59.93	60.45	66.59
Net returns less cash expenses and capital replacement	261.29	368.78	194.14
=====			
Economic (full ownership) costs:			
Variable cash expenses	274.22	274.84	378.16
General farm overhead	46.07	51.49	46.14
Taxes and insurance	18.29	18.96	36.12
Capital replacement	59.93	60.45	66.59
Allocated returns to owned inputs:			
Return to operating capital ^{4/}	5.97	6.53	15.14
Return to other nonland capital ^{5/}	12.57	14.52	17.56
Net land return ^{6/}	107.74	115.71	143.75
Unpaid labor	50.06	49.58	31.40
Total, economic costs	574.85	592.08	734.86
Residual returns to management and risk ^{7/}	157.03	260.73	53.12
=====			
Season-average price (dollars per net ton)	35.90	38.20	41.20
Yield (net tons per planted acre)	20.39	22.30	19.19

^{1/} Sum of operator and landlord costs and returns. ^{2/} Water purchased by landlords is included in rental value of land (net land return). ^{3/} Gross value of production less total cash expenses. ^{4/} Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. ^{5/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{6/} Rental value of land based on composite share and cash rent. ^{7/} Gross value of production less total economic costs.

N/A = Not available.

Table 37--Sugar-beet production costs and returns per planted acre,
Michigan and Ohio, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	510.90	597.14	587.68
Total	510.90	597.14	587.68
=====			
Cash expenses:			
Seed	14.07	14.07	16.80
Fertilizer	64.71	63.25	72.14
Chemicals	35.56	34.72	48.70
Custom operations	11.44	11.59	22.34
Fuel, lubrication, and electricity	23.43	23.77	23.40
Repairs	28.46	28.65	38.03
Hired labor	14.82	15.70	48.80
Noncash benefits	N/A	N/A	1.70
Freight and dirt-hauling charges	N/A	N/A	9.52
Miscellaneous	2.14	2.17	2.01
Hauling allowance	N/A	N/A	-.68
Total, variable cash expenses	194.63	193.92	282.76
General farm overhead	15.19	17.87	32.44
Taxes and insurance	31.41	32.12	68.55
Interest	51.13	58.08	62.47
Total, fixed cash expenses	97.73	108.07	163.46
Total, cash expenses	292.36	301.99	446.22
Net returns less cash expenses <u>2/</u>	218.54	295.15	141.46
Capital replacement	46.43	46.73	68.80
Net returns less cash expenses and capital replacement	172.11	248.42	72.66
=====			
Economic (full ownership) costs:			
Variable cash expenses	194.63	193.92	282.76
General farm overhead	15.19	17.87	32.44
Taxes and insurance	31.41	32.12	68.55
Capital replacement	46.43	46.73	68.80
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	3.91	4.22	9.81
Return to other nonland capital <u>4/</u>	10.21	11.80	19.52
Net land return <u>5/</u>	65.29	63.15	71.58
Unpaid labor	31.49	33.36	32.29
Total, economic costs	398.56	403.17	585.75
Residual returns to management and risk <u>6/</u>	112.34	193.97	1.93
=====			
Season-average price (dollars per ton)	30.00	30.25	35.90
Yield (net tons per planted acre)	17.03	19.74	16.37
=====			

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value of land based on composite share and cash rent. 6/ Gross value of production less total economic costs.

N/A = Not available.

Table 38--Sugar-beet production costs and returns per planted acre,
Minnesota and eastern North Dakota, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	659.74	838.88	622.94
Total	659.74	838.88	622.94
=====			
Cash expenses:			
Seed	23.67	23.67	38.33
Fertilizer	27.00	25.29	32.13
Chemicals	51.64	50.43	56.25
Custom operations	10.96	10.67	18.82
Fuel, lubrication, and electricity	23.06	23.08	20.79
Repairs	32.35	32.57	28.84
Hired labor	29.80	30.36	67.39
Noncash benefits	N/A	N/A	2.22
Freight and dirt-hauling charges	N/A	N/A	8.12
Miscellaneous	.22	.22	1.36
Hauling allowance	N/A	N/A	-12.12
Total, variable cash expenses	198.70	196.29	262.13
General farm overhead	35.26	45.13	34.20
Taxes and insurance	16.81	17.43	28.15
Interest	64.11	79.22	53.39
Total, fixed cash expenses	116.18	141.78	115.74
Total, cash expenses	314.88	338.07	377.87
Net returns less cash expenses <u>2/</u>	344.86	500.81	245.07
Capital replacement	59.03	59.43	66.46
Net returns less cash expenses and capital replacement	285.83	441.38	178.61
=====			
Economic (full ownership) costs:			
Variable cash expenses	198.70	196.29	262.13
General farm overhead	35.26	45.13	34.20
Taxes and insurance	16.81	17.43	28.15
Capital replacement	59.03	59.43	66.46
Allocated returns to owned inputs:			
Return to operating capital <u>3/</u>	3.86	4.13	9.49
Return to other nonland capital <u>4/</u>	12.80	14.80	17.95
Net land return <u>5/</u>	79.12	85.77	117.01
Unpaid labor	32.28	32.88	22.90
Total, economic costs	437.86	455.86	558.29
Residual returns to management and risk <u>6/</u>	221.88	383.02	64.65
=====			
Season-average price (dollars per ton)	39.20	42.80	43.90
Yield (net tons per planted acre)	16.83	19.60	14.19

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value of land based on composite share and cash rent. 6/ Gross value of production less total economic costs.

N/A = Not available.

Table 39--Sugar-beet production costs and returns per planted acre,
Colorado, Nebraska, and southeastern Wyoming, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	757.66	684.28	936.99
Secondary crop	2.14	2.04	.40
Total	759.80	686.32	937.39
=====			
Cash expenses:			
Seed	29.11	30.97	37.49
Fertilizer	29.91	28.90	49.68
Chemicals	26.66	26.02	49.91
Custom operations	16.98	16.53	25.97
Fuel, lubrication, and electricity	53.64	53.83	57.27
Repairs	39.60	39.88	46.30
Hired labor	61.28	54.76	90.65
Noncash benefits	N/A	N/A	3.82
Purchased irrigation water <u>2/</u>	5.92	6.00	4.64
Freight and dirt-hauling charges	N/A	N/A	22.85
Miscellaneous	.11	.11	7.30
Hauling allowance	N/A	N/A	-5.18
Total, variable cash expenses	263.21	257.00	390.70
General farm overhead	62.89	57.19	42.37
Taxes and insurance	16.42	17.02	33.34
Interest	98.13	86.14	70.96
Total, fixed cash expenses	177.44	160.35	146.67
Total, cash expenses	440.65	417.35	537.37
Net returns less cash expenses <u>3/</u>	319.15	268.97	400.02
Capital replacement	67.30	69.28	76.00
Net returns less cash expenses and capital replacement	251.85	199.69	324.02
=====			
Economic (full ownership) costs:			
Variable cash expenses	263.21	257.00	390.70
General farm overhead	62.89	57.19	42.37
Taxes and insurance	16.42	17.02	33.34
Capital replacement	67.30	69.28	76.00
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	5.91	6.13	13.70
Return to other nonland capital <u>5/</u>	14.02	16.22	19.41
Net land return <u>6/</u>	155.73	139.88	217.78
Unpaid labor	81.23	72.60	53.18
Total, economic costs	666.71	635.32	846.48
Residual returns to management and risk <u>7/</u>	93.09	51.00	90.91
=====			
Season-average price (dollars per ton)	32.70	35.40	43.10
Yield (net tons per planted acre)	23.17	19.33	21.74

1/ Sum of operator and landlord costs and returns. 2/ Water purchased by landlords is included in rental value of land (net land return). 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value of land based on composite share and cash rent. 7/ Gross value of production less total economic costs.
N/A = Not available.

Table 40--Sugar-beet production costs and returns per planted acre, Texas, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	535.68	599.04	819.68
Secondary crop	1.69	1.61	13.88
Total	537.37	600.65	833.56
Cash expenses:			
Seed	23.68	25.57	24.32
Fertilizer	24.99	23.22	47.43
Chemicals	107.31	104.78	94.67
Custom operations	77.10	75.04	92.05
Fuel, lubrication, and electricity	100.11	96.06	109.76
Repairs	49.19	49.52	61.02
Hired labor	51.61	53.38	67.36
Noncash benefits	N/A	N/A	4.54
Miscellaneous	N/A	N/A	2.51
Hauling allowance	N/A	N/A	-6.26
Total, variable cash expenses	433.99	427.57	497.40
General farm overhead	23.83	26.82	58.18
Taxes and insurance	11.37	11.76	16.43
Interest	45.75	49.69	66.52
Total, fixed cash expenses	80.95	88.27	141.13
Total, cash expenses	514.94	515.84	638.53
Net returns less cash expenses ^{2/}	22.43	84.81	195.03
Capital replacement	62.21	62.62	62.31
Net returns less cash expenses and capital replacement	-39.78	22.19	132.72
Economic (full ownership) costs:			
Variable cash expenses	433.99	427.57	497.40
General farm overhead	23.83	26.82	58.18
Taxes and insurance	11.37	11.76	16.43
Capital replacement	62.21	62.62	62.31
Allocated returns to owned inputs:			
Return to operating capital ^{3/}	9.49	10.20	17.43
Return to other nonland capital ^{4/}	11.48	13.27	14.17
Net land return ^{5/}	49.57	61.71	135.70
Unpaid labor	49.59	51.29	25.66
Total, economic costs	651.53	665.24	827.28
Residual returns to management and risk ^{6/}	-114.16	-64.59	6.28
Season-average price (dollars per ton)	24.00	32.00	37.60
Yield (net tons per planted acre)	22.32	18.72	21.80

^{1/} Sum of operator and landlord costs and returns. ^{2/} Gross value of production less total cash expenses. ^{3/} Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. ^{4/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{5/} Rental value of land based on composite share and cash rent. ^{6/} Gross value of production less total economic costs.

N/A = Not available.

Table 41--Sugar-beet production costs and returns per planted acre,
Montana, northwestern Wyoming, and northwestern North Dakota, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	781.26	896.53	931.95
Secondary crop	1.70	1.63	4.21
Total	782.96	898.16	936.16
=====			
Cash expenses:			
Seed	28.46	30.47	31.37
Fertilizer	45.64	44.86	74.62
Chemicals	28.63	27.96	37.82
Custom operations	23.78	23.15	5.64
Fuel, lubrication, and electricity	32.14	32.22	39.80
Repairs	34.70	34.93	52.05
Hired labor	57.96	54.51	116.25
Noncash benefits	N/A	N/A	5.24
Purchased irrigation water ^{2/}	10.75	10.90	8.74
Freight and dirt-hauling charges	N/A	N/A	17.32
Miscellaneous	.18	.18	2.06
Hauling allowance	N/A	N/A	-1.74
Total, variable cash expenses	262.24	259.18	389.17
General farm overhead	48.26	55.73	59.82
Taxes and insurance	13.12	13.66	22.90
Interest	76.54	85.33	84.44
Total, fixed cash expenses	137.92	154.72	167.16
Total, cash expenses	400.16	413.90	556.33
Net returns less cash expenses ^{3/}	382.80	484.26	379.83
Capital replacement	58.57	58.96	75.30
Net returns less cash expenses and capital replacement	324.23	425.30	304.53
=====			
Economic (full ownership) costs:			
Variable cash expenses	262.24	259.18	389.17
General farm overhead	48.26	55.73	59.82
Taxes and insurance	13.12	13.66	22.90
Capital replacement	58.57	58.96	75.30
Allocated returns to owned inputs:			
Return to operating capital ^{4/}	5.75	6.09	13.53
Return to other nonland capital ^{5/}	12.07	13.95	19.49
Net land return ^{6/}	140.77	163.83	166.04
Unpaid labor	83.41	78.44	37.87
Total, economic costs	624.19	649.84	784.12
Residual returns to management and risk ^{7/}	158.77	248.32	152.04
=====			
Season-average price (dollars per ton)	38.60	40.90	45.00
Yield (net tons per planted acre)	20.24	21.92	20.71

^{1/} Sum of operator and landlord costs and returns. ^{2/} Water purchased by landlords is included in rental value of land (net land return). ^{3/} Gross value of production less total cash expenses. ^{4/} Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. ^{5/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{6/} Rental value of land based on composite share and cash rent. ^{7/} Gross value of production less total economic costs.

N/A = Not available.

Table 42--Sugar-beet production costs and returns per planted acre,
eastern Idaho, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	836.47	938.96	994.17
Secondary crop	.28	.27	.31
Total	836.75	939.23	994.48
=====			
Cash expenses:			
Seed	21.87	21.87	26.12
Fertilizer	55.58	53.81	66.46
Chemicals	13.38	13.07	47.63
Custom operations	18.44	17.47	16.97
Fuel, lubrication, and electricity	85.88	84.95	80.59
Repairs	46.04	46.35	60.21
Hired labor	17.57	16.50	110.29
Noncash benefits	N/A	N/A	3.74
Purchased irrigation water <u>2/</u>	9.38	9.51	13.45
Freight and dirt-hauling charges	N/A	N/A	12.64
Miscellaneous	N/A	N/A	2.68
Hauling allowance	N/A	N/A	-3.29
Total, variable cash expenses	268.14	263.53	437.49
General farm overhead	94.64	106.93	56.88
Taxes and insurance	17.01	17.62	27.33
Interest	80.55	87.86	91.79
Total, fixed cash expenses	192.20	212.41	176.00
Total, cash expenses	460.34	475.94	613.49
Net returns less cash expenses <u>3/</u>	376.41	463.29	380.99
Capital replacement	75.76	76.27	81.40
Net returns less cash expenses and capital replacement	300.65	387.02	299.59
=====			
Economic (full ownership) costs:			
Variable cash expenses	268.14	263.53	437.49
General farm overhead	94.64	106.93	56.88
Taxes and insurance	17.01	17.62	27.33
Capital replacement	75.76	76.27	81.40
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	6.39	6.71	15.25
Return to other nonland capital <u>5/</u>	15.08	17.44	20.56
Net land return <u>6/</u>	86.83	108.65	204.24
Unpaid labor	99.54	93.51	49.17
Total, economic costs	663.39	690.66	892.32
Residual returns to management and risk <u>7/</u>	173.36	248.57	102.16
=====			
Season-average price (dollars per ton)	36.40	38.80	43.30
Yield (net tons per planted acre)	22.98	24.20	22.96
=====			

1/ Sum of operator and landlord costs and returns. 2/ Water purchased by landlords is included in rental value of land (net land return). 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value of land based on composite share and cash rent. 7/ Gross value of production less total economic costs.

N/A = Not available.

Table 43--Sugar-beet production costs and returns per planted acre,
western Idaho and Oregon, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	1,046.18	1,030.68	1,161.70
Secondary crop	1.42	1.35	.19
Total	1,047.60	1,032.03	1,161.89
Cash expenses:			
Seed	27.58	27.58	37.11
Fertilizer	82.17	79.58	105.88
Chemicals	60.59	59.16	63.52
Custom operations	35.29	34.37	36.56
Fuel, lubrication, and electricity	42.26	42.02	52.34
Repairs	36.25	36.50	55.51
Hired labor	95.96	93.95	181.38
Noncash benefits	N/A	N/A	4.90
Purchased irrigation water <u>2/</u>	9.11	9.23	11.82
Freight and dirt-hauling charges	N/A	N/A	7.21
Miscellaneous	.06	.06	3.14
Hauling allowance	N/A	N/A	-1.35
Total, variable cash expenses	389.27	382.45	558.02
General farm overhead	93.13	92.36	82.26
Taxes and insurance	15.25	15.81	38.88
Interest	146.00	139.78	100.39
Total, fixed cash expenses	254.38	247.95	221.53
Total, cash expenses	643.65	630.40	779.55
Net returns less cash expenses <u>3/</u>	403.95	401.63	382.34
Capital replacement	59.89	60.30	84.31
Net returns less cash expenses and capital replacement	344.06	341.33	298.03
Economic (full ownership) costs:			
Variable cash expenses	389.27	382.45	558.02
General farm overhead	93.13	92.36	82.26
Taxes and insurance	15.25	15.81	38.88
Capital replacement	59.89	60.30	84.31
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	7.90	8.39	19.35
Return to other nonland capital <u>5/</u>	12.09	13.98	20.90
Net land return <u>6/</u>	234.43	233.31	266.84
Unpaid labor	39.20	38.38	46.32
Total, economic costs	851.16	844.98	1,116.88
Residual returns to management and risk <u>7/</u>	196.44	187.05	45.01
Season-average price (dollars per ton)	36.10	36.00	42.60
Yield (net tons per planted acre)	28.98	28.63	27.27

1/ Sum of operator and landlord costs and returns. 2/ Water purchased by landlords is included in rental value of land (net land return). 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value of land based on composite share and cash rent. 7/ Gross value of production less total economic costs.

N/A = Not available.

Table 44--Sugar-beet production costs and returns per planted acre,
California, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	889.29	918.66	915.67
Secondary crop	2.90	2.77	1.54
Total	892.19	921.43	917.21
=====			
Cash expenses:			
Seed	20.54	21.94	22.21
Fertilizer	42.47	38.54	66.01
Chemicals	44.27	43.23	92.26
Custom operations	120.94	117.71	164.86
Fuel, lubrication, and electricity	67.14	65.24	58.54
Repairs	34.42	34.65	31.74
Hired labor	104.97	109.84	171.94
Noncash benefits	N/A	N/A	2.01
Purchased irrigation water <u>2/</u>	23.31	23.64	27.76
Freight and dirt-hauling charges	N/A	N/A	7.42
Miscellaneous	N/A	N/A	3.16
Hauling allowance	N/A	N/A	-33.91
Total, variable cash expenses	458.06	454.79	614.00
General farm overhead	47.24	49.11	60.63
Taxes and insurance	18.35	18.89	44.44
Interest	60.69	60.91	66.13
Total, fixed cash expenses	126.28	128.91	171.20
Total, cash expenses	584.34	583.70	785.20
Net returns less cash expenses <u>3/</u>	307.85	337.73	132.01
Capital replacement	61.29	61.69	40.59
Net returns less cash expenses and capital replacement	246.56	276.04	91.42
=====			
Economic (full ownership) costs:			
Variable cash expenses	458.06	454.79	614.00
General farm overhead	47.24	49.11	60.63
Taxes and insurance	18.35	18.89	44.44
Capital replacement	61.29	61.69	40.59
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	11.19	12.29	33.63
Return to other nonland capital <u>5/</u>	12.49	14.44	10.45
Net land return <u>6/</u>	134.74	148.80	137.85
Unpaid labor	54.08	56.59	21.32
Total, economic costs	797.44	816.60	962.91
Residual returns to management and risk <u>7/</u>	94.75	104.83	-45.70
=====			
Season-average price (dollars per ton)	35.70	33.70	36.70
Yield (net tons per planted acre)	24.91	27.26	24.95
=====			

1/ Sum of operator and landlord costs and returns. 2/ Water purchased by landlords is included in rental value of land (net land return). 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value of land based on composite share and cash rent. 7/ Gross value of production less total economic costs.

N/A = Not available.

Table 45--U.S. sugarcane production costs and returns per harvested acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	828.12	858.13	870.16
Total	828.12	858.13	870.16
=====			
Cash expenses:			
Seed <u>3/</u>	2.69	2.70	4.02
Fertilizer	34.71	32.68	55.76
Chemicals	48.21	47.90	44.35
Custom operations	27.62	26.17	20.35
Fuel, lubrication, and electricity	35.47	32.59	33.02
Repairs	78.64	77.52	115.96
Hired labor	247.92	238.95	223.45
Noncash benefits	N/A	N/A	1.91
Purchased irrigation water <u>4/</u>	1.94	2.36	1.62
Miscellaneous	10.51	10.25	2.32
Hauling allowance	-10.92	-9.39	-9.81
Total, variable cash expenses	476.78	461.72	492.95
General farm overhead	57.56	56.07	59.68
Taxes and insurance	28.86	28.98	32.70
Interest	N/A	N/A	10.81
Total, fixed cash expenses	86.42	85.04	103.19
Total, cash expenses	563.20	546.77	596.14
Net returns less cash expenses <u>5/</u>	264.92	311.36	274.02
Capital replacement	62.95	63.68	46.18
Net returns less cash expenses and capital replacement	201.97	247.69	227.85
=====			
Economic (full ownership) costs:			
Variable cash expenses	476.78	461.72	492.95
General farm overhead	57.56	56.07	59.68
Taxes and insurance	28.86	28.98	32.70
Capital replacement	62.95	63.68	46.18
Allocated returns to owned inputs:			
Return to operating capital <u>6/</u>	13.92	13.64	17.40
Return to other nonland capital <u>7/</u>	18.55	20.11	20.18
Net land return <u>8/</u>	154.98	155.12	143.09
Unpaid labor	24.50	25.02	21.33
Total, economic costs	838.10	824.34	833.51
Residual returns to management and risk <u>9/</u>	-9.98	33.79	36.65
=====			
Season-average price (dollars per ton)	26.80	29.90	29.80
Yield (net tons per harvested acre)	30.90	28.70	29.20
=====			

1/ Sum of operator and landlord costs and returns. 2/ Excludes Hawaii. 3/ Purchased seed only. Costs of homegrown seed cane are included in other variable cash expenses. 4/ Water purchased by landlords is included in rental value of land (net land return). 5/ Gross value of production less total cash expenses. 6/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 7/ For Louisiana and Texas--Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. For Florida and Hawaii--Adjusted book value of assets multiplied by 10-year U.S. Treasury bill rate. 8/ Rental value of land based on composite share and cash rent. 9/ Gross value of production less total economic costs. N/A = Not available.

Table 46--Sugarcane production costs and returns per harvested acre, Florida, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	959.90	962.54	1,030.16
Total	959.90	962.54	1,030.16
=====			
Cash expenses:			
Seed ^{2/}	3.57	3.71	2.60
Fertilizer	35.09	34.38	66.85
Chemicals	42.31	42.45	47.89
Custom operations	34.35	32.45	24.59
Fuel, lubrication, and electricity	28.18	22.52	33.19
Repairs	85.50	84.02	147.71
Hired labor	396.51	391.42	320.02
Miscellaneous	17.77	17.93	4.03
Total, variable cash expenses	643.28	628.88	646.88
General farm overhead	62.90	62.09	74.16
Taxes and insurance	35.99	36.53	41.73
Interest	N/A	N/A	N/A
Total, fixed cash expenses	98.89	98.62	115.89
Total, cash expenses	742.17	727.50	762.77
Net returns less cash expenses ^{3/}	217.73	235.04	267.39
Capital replacement	48.77	49.49	33.88
Net returns less cash expenses and capital replacement	168.96	185.55	233.51
=====			
Economic (full ownership) costs:			
Variable cash expenses	643.28	628.88	646.88
General farm overhead	62.90	62.09	74.16
Taxes and insurance	35.99	36.53	41.73
Capital replacement	48.77	49.49	33.88
Allocated returns to owned inputs:			
Return to operating capital ^{4/}	19.41	19.04	22.39
Return to other nonland capital ^{5/}	20.22	21.49	24.29
Net land return ^{6/}	184.46	179.51	175.88
Unpaid labor	N/A	N/A	N/A
Total, economic costs	1,015.03	997.03	1,019.21
Residual returns to management and risk ^{7/}	-55.13	-34.49	10.95
=====			
Season-average price (dollars per ton)	29.00	29.80	32.60
Yield (net tons per harvested acre)	33.10	32.30	31.60
=====			

^{1/} Sum of operator and landlord costs and returns. ^{2/} Purchased seed only. Costs of homegrown seed cane are included in other variable cash expenses. ^{3/} Gross value of production less total cash expenses. ^{4/} Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. ^{5/} Adjusted book value of assets multiplied by 10-year U.S. Treasury bill rate. ^{6/} Rental value of land based on composite share and cash rent. ^{7/} Gross value of production less total economic costs. N/A = Not available.

Table 47--Sugarcane production costs and returns per harvested acre, Hawaii, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop ^{2/}	N/A	N/A	N/A
Total	N/A	N/A	N/A
=====			
Cash expenses:			
Fertilizer	243.70	236.72	222.45
Chemicals	98.03	96.70	109.93
Custom operations	50.39	45.29	49.91
Fuel, lubrication, and electricity	66.85	45.78	72.27
Repairs	336.99	319.22	386.76
Hired labor	1,087.31	1,128.53	1,123.09
Miscellaneous	98.78	99.14	86.16
Total, variable cash expenses	1,982.05	1,971.38	2,050.57
General farm overhead	219.76	231.58	231.63
Taxes and insurance	36.17	39.41	37.90
Interest	N/A	N/A	N/A
Total, fixed cash expenses	255.93	270.99	269.53
Total, cash expenses	2,237.98	2,242.37	2,320.10
Net returns less cash expenses ^{3/}	N/A	N/A	N/A
Capital replacement	186.33	203.43	141.01
Net returns less cash expenses and capital replacement	N/A	N/A	N/A
=====			
Economic (full ownership) costs:			
Variable cash expenses	1,982.05	1,971.38	2,050.57
General farm overhead	219.76	231.58	231.63
Taxes and insurance	36.17	39.41	37.90
Capital replacement	186.33	203.43	141.01
Allocated returns to owned inputs:			
Return to operating capital ^{4/}	59.86	59.73	70.86
Return to other nonland capital ^{5/}	106.51	121.67	78.86
Net land return ^{6/}	227.24	253.12	211.15
Unpaid labor	N/A	N/A	N/A
Total, economic costs	2,817.92	2,880.32	2,821.98
Residual returns to management and risk ^{7/}	N/A	N/A	N/A
=====			
Season-average price (dollars per net ton)	N/A	N/A	N/A
Yield (net tons per harvested acre)	100.20	98.80	90.60
=====			

^{1/} Includes both operator and landlord costs. ^{2/} Integrated producer/processor plantations do not value crop before selling raw sugar to other refiners or before milling, refining and selling refined sugar. ^{3/} Gross value of production less total cash expenses. ^{4/} Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. ^{5/} Adjusted book value of assets multiplied by the 10-year U.S. Treasury bill rate. ^{6/} Rental value of land based on composite share and cash rent. ^{7/} Gross value of production less total economic costs.
N/A = Not available.

Table 48--Sugarcane production costs and returns per harvested acre,
Louisiana, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	630.63	703.03	662.86
Total	630.63	703.03	662.86
=====			
Cash expenses:			
Seed <u>2/</u>	1.57	1.54	5.46
Fertilizer	32.35	28.84	39.78
Chemicals	55.77	54.20	38.33
Custom operations	16.07	15.67	6.42
Fuel, lubrication, and electricity	48.40	49.04	32.68
Repairs	68.74	68.87	74.09
Hired labor	18.04	17.84	85.45
Noncash benefits	N/A	N/A	4.90
Hauling allowance	-29.51	-24.72	-25.15
Total, variable cash expenses	211.43	211.28	261.96
General farm overhead	46.74	46.83	38.51
Taxes and insurance	19.64	20.26	19.85
Interest	N/A	N/A	21.48
Total, fixed cash expenses	66.38	67.09	79.84
Total, cash expenses	277.81	278.37	341.80
Net returns less cash expenses <u>3/</u>	352.82	424.66	321.06
Capital replacement	88.84	89.03	65.66
Net returns less cash expenses and capital replacement	263.98	335.63	255.40
=====			
Economic (full ownership) costs:			
Variable cash expenses	211.43	211.28	261.96
General farm overhead	46.74	46.83	38.51
Taxes and insurance	19.64	20.26	19.85
Capital replacement	88.84	89.03	65.66
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	5.00	5.26	9.93
Return to other nonland capital <u>5/</u>	17.44	20.07	15.74
Net land return <u>6/</u>	111.51	123.73	99.36
Unpaid labor	64.45	63.72	52.25
Total, economic costs	565.05	580.18	563.26
Residual returns to management and risk <u>7/</u>	65.58	122.85	99.60
=====			
Season-average price (dollars per net ton)	23.10	30.70	26.20
Yield (net tons per harvested acre)	27.30	22.90	25.30

1/ Sum of operator and landlord costs and returns. 2/ Purchased seed only. Costs of homegrown seed cane are included in other variable cash expenses. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value of land based on composite share and cash rent. 7/ Gross value of production less total economic costs.
N/A = Not available.

Table 49--Sugarcane production costs and returns per harvested acre, Texas, 1986-88 ^{1/}

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	855.25	791.04	806.88
Total	855.25	791.04	806.88
Cash expenses:			
Seed ^{2/}	N/A	N/A	10.15
Fertilizer	50.95	42.50	53.55
Chemicals	65.26	62.11	52.54
Custom operations	35.11	34.37	95.78
Fuel, lubrication, and electricity	23.31	22.30	33.96
Repairs	69.05	69.25	71.69
Hired labor	182.63	181.20	192.77
Purchased irrigation water ^{3/}	48.38	47.16	40.47
Miscellaneous	.60	.61	.61
Total, variable cash expenses	475.29	459.50	551.52
General farm overhead	78.94	57.59	59.61
Taxes and insurance	8.98	9.14	29.23
Interest	N/A	N/A	60.76
Total, fixed cash expenses	87.92	66.73	149.60
Total, cash expenses	563.21	526.23	701.12
Net returns less cash expenses ^{4/}	292.04	264.81	105.76
Capital replacement	32.64	32.73	31.47
Net returns less cash expenses and capital replacement	259.40	232.08	74.29
Economic (full ownership) costs:			
Variable cash expenses	475.29	459.50	551.52
General farm overhead	78.94	57.59	59.61
Taxes and insurance	8.98	9.14	29.23
Capital replacement	32.64	32.73	31.47
Allocated returns to owned inputs:			
Return to operating capital ^{5/}	15.44	15.68	19.08
Return to other nonland capital ^{6/}	4.08	4.60	4.88
Net land return ^{7/}	122.37	115.69	102.13
Unpaid labor	16.31	16.03	23.76
Total, economic costs	754.05	710.96	821.68
Residual returns to management and risk ^{8/}	101.20	80.08	-14.80
Season-average price (dollars per net ton)	27.50	25.60	24.60
Yield (net tons per harvested acre)	31.10	30.90	32.80

^{1/} Sum of operator and landlord costs and returns. ^{2/} Purchased seed only. Costs of homegrown seed cane are included in other variable cash expenses. ^{3/} Water purchased by landlords is included in rental value of land (net land return). ^{4/} Gross value of production less total cash expenses. ^{5/} Variable expenses multiplied by part of year used and by 6-month U.S. Treasury bill rate. ^{6/} Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. ^{8/} Rental value of land based on composite share and cash rent. ^{9/} Gross value of production less total economic costs.

N/A = Not available.

Table 50--U.S. sunflower production costs and returns per planted acre, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	97.72	98.37	102.92
Total	97.72	98.37	102.92
=====			
Cash expenses:			
Seed	12.86	12.79	12.09
Fertilizer	8.49	7.52	8.46
Chemicals	8.47	8.65	8.86
Custom operations	2.62	2.75	2.90
Fuel, lubrication, and electricity	4.42	5.55	5.02
Repairs	5.37	5.42	5.28
Hired labor	1.33	1.25	1.24
Drying	2.68	2.88	1.68
Technical services	.34	.34	.34
Total, variable cash expenses	46.58	47.15	45.87
General farm overhead	5.22	7.55	7.28
Taxes and insurance	6.67	6.72	6.43
Interest on operating loans	5.22	4.08	3.67
Interest on real estate	6.13	8.29	6.60
Total, fixed cash expenses	23.24	26.64	23.98
Total, cash expenses	69.82	73.79	69.85
Net returns less cash expenses 2/	27.90	24.58	33.07
Capital replacement	19.00	18.92	19.02
Net returns less cash expenses and capital replacement	8.90	5.66	14.05
=====			
Economic (full ownership) costs:			
Variable cash expenses	46.58	47.15	45.87
General farm overhead	5.22	7.55	7.28
Taxes and insurance	6.67	6.72	6.43
Capital replacement	19.00	18.92	19.02
Allocated returns to owned inputs:			
Return to operating capital 3/	.95	1.05	1.23
Return to other nonland capital 4/	3.47	3.85	4.26
Net land return 5/	26.66	25.52	26.64
Unpaid labor	5.65	5.34	5.31
Total, economic costs	114.20	116.10	116.04
Residual returns to management and risk 6/	-16.48	-17.73	-13.02
=====			
Harvest-month price (dollars per hundredweight)	7.39	6.80	12.36
Yield (hundredweight per planted acre)	13.23	14.47	8.33
=====			

1/ Sum of operator and landlord costs and returns. 2/ Gross value of production less total cash expenses. 3/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 4/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 5/ Rental value based on composite share and cash rent. 6/ Gross value of production less total economic costs.

Table 51--U.S. wheat production costs and returns per planted acre, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	66.06	76.21	95.71
Secondary crop	2.06	2.18	3.66
Total	68.12	78.39	99.37
Cash expenses:			
Seed	7.29	6.62	6.83
Fertilizer	12.93	11.75	14.08
Lime and gypsum	1.60	1.32	1.25
Chemicals	4.06	3.91	3.84
Custom operations	3.94	3.92	3.81
Fuel, lubrication, and electricity	6.74	7.56	7.48
Repairs	6.17	6.32	6.40
Hired labor	2.54	2.53	2.58
Purchased irrigation water	.22	.20	.20
Technical services	.18	.17	.16
Total, variable cash expenses	45.67	44.30	46.63
General farm overhead	4.69	6.01	6.87
Taxes and insurance	7.92	8.11	8.12
Interest on operating loans	3.83	3.36	3.49
Interest on real estate	5.25	6.73	6.06
Total, fixed cash expenses	21.69	24.21	24.54
Total, cash expenses	67.36	68.51	71.17
Net returns less cash expenses <u>3/</u>	.76	9.88	28.20
Capital replacement	19.90	20.33	20.57
Net returns less cash expenses and capital replacement	-19.14	-10.45	7.63
Economic (full ownership) costs:			
Variable cash expenses	45.67	44.30	46.63
General farm overhead	4.69	6.01	6.87
Taxes and insurance	7.92	8.11	8.12
Capital replacement	19.90	20.33	20.57
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.38	1.46	1.79
Return to other nonland capital <u>5/</u>	3.66	4.18	4.76
Net land return <u>6/</u>	23.30	24.98	31.31
Unpaid labor	5.66	5.63	5.75
Total, economic costs	112.18	115.00	125.80
Residual returns to management and risk <u>7/</u>	-44.06	-36.61	-26.43
Harvest-month price (dollars per bushel)	2.29	2.39	3.50
Yield (bushels per planted acre)	28.79	31.87	27.38

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 52--Wheat production costs and returns per planted acre,
Central Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	63.54	76.85	102.52
Secondary crop	.55	.59	.64
Total	64.09	77.44	103.16
=====			
Cash expenses:			
Seed	6.55	5.71	5.88
Fertilizer	7.45	6.73	7.57
Lime and gypsum	5.84	4.70	4.68
Chemicals	1.07	1.07	1.07
Custom operations	4.52	4.63	4.85
Fuel, lubrication, and electricity	4.83	5.98	6.18
Repairs	6.10	6.32	6.56
Hired labor	2.58	2.42	2.60
Technical services	.06	.06	.06
Total, variable cash expenses	39.00	37.62	39.44
General farm overhead	3.69	6.10	7.44
Taxes and insurance	9.05	9.39	9.65
Interest on operating loans	3.26	3.30	3.84
Interest on real estate	4.33	7.36	6.79
Total, fixed cash expenses	20.33	26.15	27.72
Total, cash expenses	59.33	63.77	67.16
Net returns less cash expenses <u>3/</u>	4.76	13.67	36.00
Capital replacement	18.66	19.19	20.16
Net returns less cash expenses and capital replacement	-13.90	-5.52	15.84
=====			
Economic (full ownership) costs:			
Variable cash expenses	39.00	37.62	39.44
General farm overhead	3.69	6.10	7.44
Taxes and insurance	9.05	9.39	9.65
Capital replacement	18.66	19.19	20.16
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.37	1.44	1.74
Return to other nonland capital <u>5/</u>	3.56	4.11	4.88
Net land return <u>6/</u>	15.51	18.69	25.36
Unpaid labor	5.74	5.39	5.77
Total, economic costs	96.58	101.93	114.45
Residual returns to management and risk <u>7/</u>	-32.49	-24.49	-11.29
=====			
Harvest-month price (dollars per bushel)	2.15	2.26	3.27
Yield (bushels per planted acre)	29.55	34.06	31.31
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 53--Wheat production costs and returns per planted acre,
North-Central, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	69.28	113.55	161.28
Secondary crop	13.52	16.75	31.30
Total	82.80	130.30	192.58
=====			
Cash expenses:			
Seed	11.86	10.40	10.78
Fertilizer	25.01	23.74	28.55
Lime and gypsum	.39	.35	.32
Chemicals	1.47	1.49	1.40
Custom operations	1.75	1.82	1.86
Fuel, lubrication, and electricity	4.85	6.54	6.81
Repairs	4.57	5.41	6.05
Hired labor	2.97	3.39	3.69
Technical services	.04	.02	.04
Total, variable cash expenses	52.91	53.17	59.50
General farm overhead	3.96	7.78	11.55
Taxes and insurance	12.07	12.74	12.69
Interest on operating loans	3.31	4.52	5.51
Interest on real estate	6.52	9.79	13.52
Total, fixed cash expenses	25.86	34.83	43.27
Total, cash expenses	78.77	88.00	102.77
Net returns less cash expenses <u>3/</u>	4.03	42.30	89.81
Capital replacement	19.37	21.96	24.65
Net returns less cash expenses and capital replacement	-15.34	20.34	65.16
=====			
Economic (full ownership) costs:			
Variable cash expenses	52.91	53.17	59.50
General farm overhead	3.96	7.78	11.55
Taxes and insurance	12.07	12.74	12.69
Capital replacement	19.37	21.96	24.65
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	2.12	2.29	2.87
Return to other nonland capital <u>5/</u>	3.61	4.64	5.91
Net land return <u>6/</u>	29.26	44.22	64.23
Unpaid labor	6.62	7.53	8.20
Total, economic costs	129.92	154.34	189.60
Residual returns to management and risk <u>7/</u>	-47.12	-24.04	2.98
=====			
Harvest-month price (dollars per bushel)	2.29	2.37	3.42
Yield (bushels per planted acre)	30.29	47.96	47.18

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 54--Wheat production costs and returns per planted acre,
Northeast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	117.68	104.50	184.85
Secondary crop	82.74	95.48	130.20
Total	200.42	199.98	315.05
=====			
Cash expenses:			
Seed	15.20	18.03	15.84
Fertilizer	29.55	26.73	32.88
Lime and gypsum	10.68	10.40	9.92
Chemicals	5.70	6.42	6.19
Custom operations	4.38	4.54	2.30
Fuel, lubrication, and electricity	7.75	8.04	8.95
Repairs	7.38	7.38	8.07
Hired labor	4.03	3.93	4.69
Total, variable cash expenses	84.67	85.47	88.84
General farm overhead	29.92	25.92	37.49
Taxes and insurance	22.07	22.70	23.15
Interest on operating loans	4.41	9.76	9.39
Interest on real estate	21.14	20.16	17.58
Total, fixed cash expenses	77.54	78.54	87.61
Total, cash expenses	162.21	164.01	176.45
Net returns less cash expenses <u>3/</u>	38.21	35.97	138.60
Capital replacement	30.77	30.56	32.80
Net returns less cash expenses and capital replacement	7.44	5.41	105.80
=====			
Economic (full ownership) costs:			
Variable cash expenses	84.67	85.47	88.84
General farm overhead	29.92	25.92	37.49
Taxes and insurance	22.07	22.70	23.15
Capital replacement	30.77	30.56	32.80
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	3.40	3.80	4.66
Return to other nonland capital <u>5/</u>	5.77	6.41	7.85
Net land return <u>6/</u>	26.94	30.53	39.91
Unpaid labor	8.86	8.76	10.43
Total, economic costs	212.40	214.15	245.13
Residual returns to management and risk <u>7/</u>	-11.98	-14.17	69.92
=====			
Harvest-month price (dollars per bushel)	2.69	2.50	3.57
Yield (bushels per planted acre)	43.74	41.84	51.71

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 55--Wheat production costs and returns per planted acre,
Northern Plains, 1986-88 1/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	67.61	75.46	48.66
Secondary crop	1.41	1.55	1.23
Total	69.02	77.01	49.89
Cash expenses:			
Seed	6.62	5.82	6.38
Fertilizer	10.30	9.58	10.87
Chemicals	4.39	4.39	4.39
Custom operations	3.46	3.54	3.18
Fuel, lubrication, and electricity	4.13	5.10	4.47
Repairs	5.74	5.83	5.17
Hired labor	2.00	1.93	1.72
Technical services	.04	.04	.04
Total, variable cash expenses	36.68	36.23	36.22
General farm overhead	4.22	6.24	3.77
Taxes and insurance	7.26	7.43	6.76
Interest on operating loans	3.68	3.37	1.98
Interest on real estate	5.11	7.69	3.76
Total, fixed cash expenses	20.27	24.73	16.27
Total, cash expenses	56.95	60.96	52.49
Net returns less cash expenses <u>3/</u>	12.07	16.05	-2.60
Capital replacement	21.42	21.79	19.74
Net returns less cash expenses and capital replacement	-9.35	-5.74	-22.34
Economic (full ownership) costs:			
Variable cash expenses	36.68	36.23	36.22
General farm overhead	4.22	6.24	3.77
Taxes and insurance	7.26	7.43	6.76
Capital replacement	21.42	21.79	19.74
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	.56	.61	.74
Return to other nonland capital <u>5/</u>	3.96	4.48	4.43
Net land return <u>6/</u>	28.61	28.10	24.77
Unpaid labor	4.44	4.29	3.84
Total, economic costs	107.15	109.17	100.27
Residual returns to management and risk <u>7/</u>	-38.13	-32.16	-50.38
Harvest-month price (dollars per bushel)	2.28	2.45	3.87
Yield (bushels per planted acre)	29.69	30.81	12.56

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 56--Wheat production costs and returns per planted acre,
Northwest, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	122.12	152.33	224.85
Secondary crop	.89	.82	1.01
Total	123.01	153.15	225.86
=====			
Cash expenses:			
Seed	8.83	8.29	7.27
Fertilizer	20.15	19.20	19.66
Chemicals	10.07	10.08	10.03
Custom operations	2.73	2.79	2.86
Fuel, lubrication, and electricity	11.94	13.10	12.73
Repairs	10.32	10.90	10.97
Hired labor	3.43	3.78	3.65
Purchased irrigation water	1.85	1.90	1.91
Technical services	.34	.34	.34
Total, variable cash expenses	69.66	70.38	69.42
General farm overhead	10.77	13.31	17.22
Taxes and insurance	10.76	11.30	11.02
Interest on operating loans	7.85	5.86	7.80
Interest on real estate	12.72	13.36	13.61
Total, fixed cash expenses	42.10	43.83	49.65
Total, cash expenses	111.76	114.21	119.07
Net returns less cash expenses <u>3/</u>	11.25	38.94	106.79
Capital replacement	26.39	27.87	27.62
Net returns less cash expenses and capital replacement	-15.14	11.07	79.17
=====			
Economic (full ownership) costs:			
Variable cash expenses	69.65	70.38	69.42
General farm overhead	10.77	13.31	17.22
Taxes and insurance	10.76	11.30	11.02
Capital replacement	26.39	27.87	27.62
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	2.56	2.83	3.23
Return to other nonland capital <u>5/</u>	4.86	5.76	6.41
Net land return <u>6/</u>	43.72	51.04	72.76
Unpaid labor	7.62	8.41	8.11
Total, economic costs	176.33	190.90	215.79
Residual returns to management and risk <u>7/</u>	-53.32	-37.75	10.07
=====			
Harvest-month price (dollars per bushel)	2.41	2.50	3.74
Yield (bushels per planted acre)	50.69	60.82	60.13

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 57--Wheat production costs and returns per planted acre,
Southeast, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	67.63	79.56	144.07
Secondary crop	1.37	1.48	1.77
Total	69.00	81.04	145.84
=====			
Cash expenses:			
Seed	10.61	10.00	11.04
Fertilizer	28.79	26.84	32.82
Lime and gypsum	.99	.93	.84
Chemicals	1.83	1.74	1.76
Custom operations	3.32	3.08	3.27
Fuel, lubrication, and electricity	4.55	5.83	6.27
Repairs	5.69	5.96	7.15
Hired labor	2.59	2.71	3.06
Technical services	.01	.01	.01
Total, variable cash expenses	58.38	57.10	66.22
General farm overhead	4.01	4.63	8.15
Taxes and insurance	7.30	7.56	8.03
Interest on operating loans	3.44	3.11	3.50
Interest on real estate	4.11	4.22	6.55
Total, fixed cash expenses	18.86	19.52	26.23
Total, cash expenses	77.24	76.62	92.45
Net returns less cash expenses <u>3/</u>	-8.24	4.42	53.39
Capital replacement	18.24	18.97	21.37
Net returns less cash expenses and capital replacement	-26.48	-14.55	32.02
=====			
Economic (full ownership) costs:			
Variable cash expenses	58.38	57.10	66.22
General farm overhead	4.01	4.63	8.15
Taxes and insurance	7.30	7.56	8.03
Capital replacement	18.24	18.97	21.37
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.90	2.05	2.78
Return to other nonland capital <u>5/</u>	3.07	3.58	4.73
Net land return <u>6/</u>	20.54	19.90	27.50
Unpaid labor	5.77	6.02	6.81
Total, economic costs	119.21	119.81	145.59
Residual returns to management and risk <u>7/</u>	-50.21	-38.77	.25
=====			
Harvest-month price (dollars per bushel)	2.47	2.47	3.38
Yield (bushels per planted acre)	27.33	32.19	42.61

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 58--Wheat production costs and returns per planted acre,
Southern Plains, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	39.45	38.17	65.34
Secondary crop	.09	.12	.09
Total	39.54	38.29	65.43
=====			
Cash expenses:			
Seed	5.73	5.61	4.94
Fertilizer	11.87	10.25	11.95
Chemicals	5.88	5.56	5.48
Custom operations	4.11	3.87	3.81
Fuel, lubrication, and electricity	10.71	10.99	11.36
Repairs	5.90	5.86	6.28
Hired labor	2.49	2.55	2.61
Technical services	.48	.45	.44
Total, variable cash expenses	47.17	45.14	46.87
General farm overhead	3.58	2.55	4.11
Taxes and insurance	4.92	5.03	5.20
Interest on operating loans	3.09	2.17	2.83
Interest on real estate	2.82	2.14	2.76
Total, fixed cash expenses	14.41	11.89	14.90
Total, cash expenses	61.58	57.03	61.77
Net returns less cash expenses <u>3/</u>	-22.04	-18.74	3.66
Capital replacement	17.30	17.03	17.94
Net returns less cash expenses and capital replacement	-39.34	-35.77	-14.28
=====			
Economic (full ownership) costs:			
Variable cash expenses	47.17	45.14	46.87
General farm overhead	3.58	2.55	4.11
Taxes and insurance	4.92	5.03	5.20
Capital replacement	17.30	17.03	17.94
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	1.63	1.75	2.07
Return to other nonland capital <u>5/</u>	3.05	3.35	4.09
Net land return <u>6/</u>	13.85	13.68	21.06
Unpaid labor	5.54	5.67	5.81
Total, economic costs	97.04	94.20	107.15
Residual returns to management and risk <u>7/</u>	-57.50	-55.91	-41.72
=====			
Harvest-month price (dollars per bushel)	2.28	2.32	3.35
Yield (bushels per planted acre)	17.30	16.46	19.51
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 59--Wheat production costs and returns per planted acre,
Southwest, 1986-88 1/, 2/

Item	1986	1987	1988
<u>Dollars</u>			
Gross value of production:			
Primary crop	207.00	201.79	323.19
Secondary crop	.73	.66	.79
Total	207.73	202.45	323.98
=====			
Cash expenses:			
Seed	16.58	17.21	15.97
Fertilizer	19.93	18.30	20.14
Chemicals	10.22	10.20	10.18
Custom operations	21.63	21.71	22.78
Fuel, lubrication, and electricity	25.77	27.16	28.72
Repairs	9.33	9.53	10.12
Hired labor	8.40	8.70	8.97
Purchased irrigation water	7.27	7.29	7.30
Technical services	1.02	1.00	1.00
Total, variable cash expenses	120.15	121.10	125.17
General farm overhead	18.46	17.43	24.34
Taxes and insurance	17.49	17.74	18.03
Interest on operating loans	13.96	7.24	10.47
Interest on real estate	21.67	14.82	18.13
Total, fixed cash expenses	71.58	57.23	70.97
Total, cash expenses	191.73	178.33	196.14
Net returns less cash expenses <u>3/</u>	16.00	24.12	127.83
Capital replacement	24.24	24.50	25.83
Net returns less cash expenses and capital replacement	-8.24	-.38	102.00
=====			
Economic (full ownership) costs:			
Variable cash expenses	120.15	121.10	125.17
General farm overhead	18.46	17.43	24.34
Taxes and insurance	17.49	17.74	18.03
Capital replacement	24.24	24.50	25.83
Allocated returns to owned inputs:			
Return to operating capital <u>4/</u>	3.05	3.45	4.06
Return to other nonland capital <u>5/</u>	4.97	5.58	6.68
Net land return <u>6/</u>	90.03	92.50	107.78
Unpaid labor	18.70	19.38	19.96
Total, economic costs	297.09	301.68	331.85
Residual returns to management and risk <u>7/</u>	-89.36	-99.23	-7.87
=====			
Harvest-month price (dollars per bushel)	2.85	2.76	4.06
Yield (bushels per planted acre)	72.72	72.99	79.62
=====			

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Gross value of production less total cash expenses. 4/ Variable expenses multiplied by time between use and harvest and by 6-month U.S. Treasury bill rate. 5/ Value of machinery and equipment multiplied by longrun real rate of return to production assets in the farm sector. 6/ Rental value based on composite share and cash rent. 7/ Gross value of production less total economic costs.

Table 60--Barley production costs per bushel, United States and regions, 1986-88 1/, 2/, 3/

Region/year	Yield : per planted : acre 4/	Cash expenses : Variable : expenses :	Cash expenses : Fixed : expenses :	Cash expenses : plus capital : replacement :	Economic costs : excluding : land 5/	Economic costs : including : land 5/
	<u>Bushels</u>				<u>Dollars</u>	
United States:						
1986	46.83	1.14	0.60	2.26	2.32	2.89
1987	47.42	1.06	.52	2.08	2.20	2.79
1988	27.81	1.88	.87	3.57	3.85	4.92
Northeast:						
1986	55.71	1.38	.57	2.40	2.64	3.11
1987	52.62	1.42	.58	2.46	2.74	3.31
1988	60.50	1.36	.51	2.31	2.61	3.17
Northern Plains:						
1986	43.28	.97	.56	2.06	2.14	2.68
1987	43.05	.94	.50	1.95	2.09	2.65
1988	16.90	2.46	1.22	4.88	5.33	6.68
Northwest:						
1986	56.65	1.49	.65	2.69	2.70	3.32
1987	64.21	1.31	.58	2.38	2.46	3.11
1988	59.66	1.44	.62	2.63	2.76	3.60

1/ Excludes direct effects of Government programs on costs. 2/ Sum of operator and landlord costs.

3/ Includes production costs of secondary products. 4/ Weighted average of States surveyed.

5/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 61--Corn production costs per bushel, United States and regions, 1986-88 1/, 2/

Region/year	Yield : per planted : acre 3/	Cash expenses : Variable : expenses :	Cash expenses : Fixed : expenses :	Cash expenses : plus capital : replacement :	Economic costs : excluding : land 4/	Economic costs : including : land 4/
	<u>Bushels</u>				<u>Dollars</u>	
United States:						
1986	118.83	1.02	0.38	1.65	1.70	2.05
1987	118.83	.99	.34	1.59	1.69	2.06
1988	83.15	1.47	.49	2.33	2.53	3.16
Lake States and Corn Belt:						
1986	126.25	.96	.41	1.61	1.64	1.98
1987	125.69	.94	.37	1.56	1.64	2.00
1988	77.06	1.60	.59	2.66	2.79	3.40
Northeast:						
1986	92.42	1.29	.35	1.98	2.20	2.46
1987	89.20	1.32	.33	2.00	2.25	2.54
1988	69.19	1.77	.43	2.65	3.06	3.52
Great Plains:						
1986	114.64	.99	.30	1.54	1.64	2.02
1987	115.23	.97	.26	1.48	1.61	2.02
1988	105.50	1.10	.28	1.67	1.85	2.57
Southeast:						
1986	72.46	1.69	.37	2.38	2.57	2.89
1987	81.02	1.51	.30	2.10	2.33	2.65
1988	71.17	1.83	.34	2.52	2.83	3.32

1/ Excludes direct effects of Government programs on costs. 2/ Sum of operator and landlord costs.

3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 62--Cotton production costs per pound, United States and regions, 1986-88 1/, 2/, 3/

Region/year	Yield per planted acre <u>4/</u>	Cash expenses Variable expenses	Cash expenses Fixed expenses	Cash expenses plus capital replacement	Economic costs excluding land <u>5/</u>	Economic costs including land <u>5/</u>
	<u>Pounds</u>	<u>Dollars</u>				
United States:						
1986	462.97	0.471	0.168	0.748	0.727	0.838
1987	683.29	.367	.102	.544	.549	.671
1988	594.94	.419	.114	.625	.641	.763
Delta:						
1986	565.15	.436	.137	.672	.661	.783
1987	779.89	.346	.085	.504	.512	.628
1988	662.98	.408	.098	.597	.616	.738
Southeast:						
1986	457.82	.561	.123	.811	.819	.908
1987	603.07	.455	.082	.634	.657	.734
1988	496.54	.552	.098	.778	.820	.910
Southern Plains:						
1986	253.48	.543	.220	.929	.917	1.045
1987	468.79	.359	.103	.553	.568	.727
1988	436.76	.380	.107	.591	.618	.755
Southwest:						
1986	1,112.37	.423	.159	.643	.602	.690
1987	1,270.18	.384	.121	.560	.544	.634
1988	1,042.25	.461	.146	.676	.668	.775

1/ Excludes direct effects of Government programs on costs. 2/ Sum of operator and landlord costs.

3/ Includes production costs of secondary products. 4/ Weighted average of States surveyed.

5/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 63--Flaxseed production costs per bushel, United States, 1986-88 1/, 2/

Year	Yield per planted acre <u>3/</u>	Cash expenses Variable expenses	Cash expenses Fixed expenses	Cash expenses plus capital replacement	Economic costs excluding land <u>4/</u>	Economic costs including land <u>4/</u>
	<u>Bushels</u>	<u>Dollars</u>				
1986	16.03	1.83	1.16	4.39	4.78	5.69
1987	15.84	1.84	1.22	4.52	4.96	5.75
1988	5.88	4.73	2.67	10.95	12.30	14.24

1/ Sum of operator and landlord costs. 2/ Includes production costs of secondary products.

3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 64--Oats production costs per bushel, United States and regions, 1986-88 1/, 2/, 3/

Region/year	: Yield : per planted : acre 4/	: Cash expenses : Variable : expenses :	: Fixed : expenses :	: Cash expenses : plus capital : replacement :	: Economic costs : excluding : land 5/	: Economic costs : including : land 5/
	<u>Bushels</u>	<u>Dollars</u>				
United States:						
1986	: 56.78	: 0.65	: 0.52	: 1.66	: 1.86	: 2.12
1987	: 53.98	: .74	: .66	: 1.91	: 2.08	: 2.39
1988	: 35.44	: 1.18	: 1.07	: 2.82	: 2.95	: 3.59
Lake States and Corn Belt:						
1986	: 60.68	: .68	: .61	: 1.79	: 1.99	: 2.29
1987	: 57.90	: .76	: .73	: 2.03	: 2.23	: 2.57
1988	: 38.68	: 1.19	: 1.21	: 2.96	: 3.04	: 3.78
Northeast:						
1986	: 64.58	: 1.03	: .73	: 2.34	: 2.60	: 2.70
1987	: 58.30	: 1.19	: .90	: 2.74	: 2.97	: 3.10
1988	: 50.72	: 1.44	: 1.02	: 3.07	: 3.39	: 3.59
Northern Plains:						
1986	: 50.37	: .53	: .35	: 1.30	: 1.48	: 1.71
1987	: 48.28	: .60	: .50	: 1.54	: 1.66	: 1.97
1988	: 27.27	: 1.04	: .80	: 2.41	: 2.57	: 3.22

1/ Excludes direct effects of Government programs on costs. 2/ Sum of operator and landlord costs.

3/ Includes production costs of secondary products. 4/ Weighted average of States surveyed.

5/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 65--Peanut production costs per pound, United States and regions, 1986-88 1/, 2/

Region/year	: Yield : per planted : acre 3/	: Cash expenses : Variable : expenses :	: Fixed : expenses :	: Cash expenses : plus capital : replacement :	: Economic costs : excluding : land 4/	: Economic costs : including : land 4/
	<u>Pounds</u>	<u>Dollars</u>				
United States:						
1986	: 2,354.78	: 0.116	: 0.048	: 0.185	: 0.178	: 0.254
1987	: 2,305.46	: .128	: .042	: .191	: .193	: .268
1988	: 2,402.36	: .124	: .039	: .184	: .190	: .264
Southeast:						
1986	: 2,384.96	: .118	: .051	: .189	: .178	: .250
1987	: 2,382.34	: .129	: .044	: .193	: .191	: .261
1988	: 2,528.60	: .121	: .040	: .181	: .183	: .252
Southern Plains:						
1986	: 1,752.30	: .124	: .050	: .200	: .202	: .317
1987	: 1,874.99	: .126	: .039	: .190	: .202	: .296
1988	: 1,789.82	: .130	: .039	: .196	: .213	: .311
Virginia and North Carolina:						
1986	: 3,061.27	: .105	: .036	: .159	: .160	: .226
1987	: 2,635.69	: .127	: .036	: .181	: .192	: .263
1988	: 2,768.79	: .129	: .034	: .185	: .196	: .264

1/ Sum of operator and landlord costs. 2/ Includes production costs of secondary products.

3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 66--Rice production costs per hundredweight, United States and regions, 1986-88 ^{1/}, ^{2/}

Region/year	: Yield : per planted : acre ^{3/}	: Cash expenses : -----: Variable : Fixed : expenses : expenses :	: Cash expenses : plus capital : replacement :	: Economic costs : excluding : land ^{4/} :	: Economic costs : including : land ^{4/} :
	: Cwt. :	: - - - - - : Dollars - - - - - :			
United States:					
1986	: 56.97	: 5.04	: 1.18	: 6.93	: 6.95
1987	: 54.67	: 5.22	: 1.07	: 7.09	: 7.32
1988	: 54.61	: 5.42	: 1.05	: 7.32	: 7.64
Arkansas (non-Delta):					
1986	: 53.95	: 4.62	: 1.16	: 6.90	: 6.87
1987	: 53.60	: 4.80	: 1.01	: 6.95	: 7.11
1988	: 53.49	: 4.92	: .99	: 7.12	: 7.38
California:					
1986	: 76.38	: 4.42	: 1.56	: 6.38	: 6.20
1987	: 70.42	: 4.76	: 1.43	: 6.64	: 6.73
1988	: 69.39	: 4.95	: 1.42	: 6.83	: 7.05
Delta:					
1986	: 51.86	: 5.13	: 1.05	: 6.96	: 7.02
1987	: 48.81	: 5.48	: .97	: 7.27	: 7.50
1988	: 50.87	: 5.64	: .93	: 7.41	: 7.72
Gulf Coast:					
1986	: 52.65	: 5.75	: 1.08	: 7.47	: 7.67
1987	: 50.63	: 5.95	: .97	: 7.59	: 7.98
1988	: 51.45	: 6.17	: .94	: 7.82	: 8.30

^{1/} Excludes direct effects of Government programs on costs. ^{2/} Sum of operator and landlord costs.
^{3/} Weighted average of States surveyed. ^{4/} Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 67--Grain sorghum production costs per bushel, United States and regions, 1986-88 ^{1/}, ^{2/}

Region/year	: Yield : per planted : acre ^{3/}	: Cash expenses : -----: Variable : Fixed : expenses : expenses :	: Cash expenses : plus capital : replacement :	: Economic costs : excluding : land ^{4/} :	: Economic costs : including : land ^{4/} :
	: Bushels :	: - - - - - : Dollars - - - - - :			
United States:					
1986	: 66.91	: 0.83	: 0.38	: 1.55	: 1.62
1987	: 68.62	: .81	: .39	: 1.53	: 1.60
1988	: 62.13	: .92	: .51	: 1.81	: 1.87
Central Plains:					
1986	: 75.28	: .71	: .33	: 1.34	: 1.38
1987	: 72.69	: .73	: .40	: 1.43	: 1.46
1988	: 63.49	: .86	: .53	: 1.76	: 1.78
Southern Plains:					
1986	: 54.15	: 1.08	: .49	: 2.01	: 2.12
1987	: 60.87	: 1.01	: .36	: 1.76	: 1.93
1988	: 59.31	: 1.04	: .48	: 1.93	: 2.08

^{1/} Excludes direct effects of Government programs on costs. ^{2/} Sum of operator and landlord costs.
^{3/} Weighted average of States surveyed. ^{4/} Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 68--Soybean production costs per bushel, United States and regions, 1986-88 1/

Region/year	Yield	Cash expenses		Cash expenses	Economic costs	Economic costs
	per	-----		plus capital	excluding	including
	planted	Variable	Fixed	replacement	land <u>3/</u>	land <u>3/</u>
	acre <u>2/</u>	expenses	expenses			
	<u>Bushels</u>	<u>Dollars</u>				
United States:						
1986	32.94	1.49	1.20	3.64	3.57	4.89
1987	33.83	1.51	1.29	3.73	3.68	5.03
1988	26.60	2.04	1.72	5.04	5.04	6.94
Delta:						
1986	18.10	2.37	1.38	5.29	5.57	6.68
1987	20.93	2.19	1.26	4.83	5.07	6.20
1988	23.90	2.07	1.17	4.51	4.85	6.31
North-Central:						
1986	37.74	1.29	1.20	3.37	3.23	4.61
1987	38.08	1.33	1.31	3.52	3.39	4.78
1988	27.41	1.95	1.88	5.14	5.05	7.18
Southeast:						
1986	22.13	2.72	1.02	4.82	5.04	6.08
1987	21.73	2.85	1.12	5.12	5.45	6.47
1988	24.81	2.66	1.31	5.04	5.25	6.46

1/ Sum of operator and landlord costs. 2/ Weighted average of States surveyed.3/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.Table 69--Sunflower production costs per hundredweight, United States, 1986-88 1/

Year	Yield	Cash expenses		Cash expenses	Economic costs	Economic costs
	per	-----		plus capital	excluding	including
	planted	Variable	Fixed	replacement	land <u>3/</u>	land <u>3/</u>
	acre <u>2/</u>	expenses	expenses			
	<u>Cwt.</u>	<u>Dollars</u>				
1986	13.23	3.52	1.76	6.71	6.62	8.63
1987	14.47	3.26	1.84	6.41	6.26	8.02
1988	8.33	5.51	2.88	10.67	10.73	13.93

1/ Sum of operator and landlord costs. 2/ Weighted average of States surveyed.3/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 70--Wheat production costs per bushel, United States and regions, 1986-88 1/, 2/, 3/

Region/year	Yield per planted acre 4/	Cash expenses Variable expenses	Fixed expenses	Cash expenses plus capital replacement	Economic costs excluding land 5/	Economic costs including land 5/
	<u>Bushels</u>	<u>Dollars</u>				
United States:						
1986	28.79	1.59	0.75	3.03	3.09	3.90
1987	31.87	1.39	.76	2.79	2.82	3.61
1988	27.38	1.70	.90	3.35	3.45	4.59
Central Plains:						
1986	29.55	1.32	.69	2.64	2.74	3.27
1987	34.06	1.10	.77	2.44	2.44	2.99
1988	31.31	1.26	.89	2.79	2.85	3.66
North-Central:						
1986	30.29	1.75	.85	3.24	3.32	4.29
1987	47.96	1.11	.73	2.29	2.30	3.22
1988	47.18	1.26	.92	2.70	2.66	4.02
Northeast:						
1986	43.74	1.94	1.77	4.41	4.24	4.86
1987	41.84	2.04	1.88	4.65	4.39	5.12
1988	51.71	1.72	1.69	4.05	3.97	4.74
Northern Plains:						
1986	29.69	1.24	.68	2.64	2.65	3.61
1987	30.81	1.18	.80	2.69	2.63	3.54
1988	12.56	2.88	1.30	5.75	6.01	7.98
Northwest:						
1986	50.69	1.37	.83	2.73	2.62	3.48
1987	60.82	1.16	.72	2.34	2.30	3.14
1988	60.13	1.15	.76	2.44	2.38	3.59
Southeast:						
1986	27.33	2.14	.69	3.61	3.49	4.36
1987	32.19	1.77	.61	3.10	2.97	3.72
1988	42.61	1.55	.62	2.77	2.67	3.42
Southern Plains:						
1986	17.30	2.73	.83	4.81	4.56	5.61
1987	16.46	2.74	.72	4.89	4.50	5.72
1988	19.51	2.40	.76	4.41	4.09	5.49
Southwest:						
1986	72.72	1.65	.98	2.97	2.85	4.09
1987	72.99	1.66	.78	2.78	2.87	4.13
1988	79.62	1.57	.89	2.79	2.81	4.17

1/ Excludes direct effects of Government programs on costs. 2/ Sum of operator and landlord costs.

3/ Includes production costs of secondary products. 4/ Weighted average of States surveyed.

5/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor.

Table 71--U.S. barley production costs and returns per planted acre, 1975-88 1/, 2/

	:	:	Costs				:	Returns								
Year	:	Yield	:	Cash expenses		:	Cash	:	:	Net	:	Net returns:	Residual			
	:	per	:	-----		:	expenses	:	Total	:	Gross	:	returns: after cash:	returns		
	:	planted:	:	:	:	:	plus	:	economic:	:	value of	:	after:	expenses:	to risk	
	:	acre <u>3/</u> :	:	Variable:	Fixed:	Total:	capital	:	costs <u>4/</u> :	:	production:	:	cash	:	and capital:	and
:	:	:	:	:	:	replacement:	:	:	:	:	:	expenses:	:	replacement:	:	management <u>5/</u>

	:	<u>Bushels</u>	<u>Dollars</u>										:			
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
1975	:	40.60	34.64	24.09	58.73	70.07	83.87	101.06	42.32	30.98	17.18					
1976	:	41.30	32.92	24.17	57.09	70.11	83.84	96.53	39.44	26.42	12.69					
1977	:	39.60	31.31	24.61	55.93	69.31	79.81	73.91	17.99	4.61	-5.90					
1978	:	45.80	41.64	27.38	69.01	86.33	106.49	91.28	22.26	4.94	-15.21					
1979	:	47.80	49.04	31.18	80.22	102.09	125.12	111.65	31.43	9.56	-13.47					
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
1980	:	43.28	56.23	34.90	91.13	114.42	137.20	118.69	27.56	4.27	-18.51					
1981	:	49.61	61.41	44.40	105.81	130.82	146.57	124.80	18.99	-6.02	-21.77					
1982	:	53.44	64.67	35.71	100.38	124.09	148.21	117.65	17.27	-6.44	-30.56					
1983	:	49.65	60.49	42.22	102.71	127.27	146.04	120.31	17.60	-6.96	-25.73					
1984	:	50.46	64.40	35.96	101.61	126.55	143.80	119.27	17.66	-7.28	-24.53					
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
1985	:	44.96	57.89	28.05	85.94	110.00	128.90	87.04	1.10	-22.96	-41.86					
1986	:	46.83	53.51	27.97	81.48	105.89	135.23	71.23	-10.25	-34.66	-64.00					
1987	:	47.42	50.30	24.60	74.90	98.51	132.07	82.26	7.36	-16.25	-49.81					
1988	:	27.81	52.34	24.15	76.49	99.39	136.75	83.65	7.16	-15.74	-53.10					

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 5/ Gross value of production less total economic costs.

Table 72--U.S. corn production costs and returns per planted acre, 1975-88 1/, 2/

	:	:	Costs				:	Returns			
Year	:	Yield	Cash expenses			Cash	:	:	Net	Net returns:	Residual
	:	per	-----			expenses	:	Total	Gross	returns:	after cash:
	:	planted:	:	:	:	plus	:	economic:	value of	after	expenses
	:	acre 3/	Variable:	Fixed:	Total:	capital	:	costs 4/	production:	cash	and capital:
:	:	:	:	:	replacement:	:	:	:	expenses:	replacement:	management 5/

:	:	Bushels	----- Dollars -----								
:	:	:	-----								
1975	:	85.70	81.34	49.09	130.43	144.71	182.57	217.50	87.07	72.79	34.94
1976	:	87.10	77.69	49.64	127.34	144.97	178.24	187.11	59.78	42.15	8.88
1977	:	88.80	80.09	50.90	131.00	149.56	183.30	180.12	49.12	30.56	-3.18
1978	:	100.50	87.44	48.26	135.70	154.87	200.36	225.94	90.25	71.08	25.59
1979	:	109.60	99.94	53.84	153.78	176.78	238.07	275.97	122.19	99.19	37.90
:	:	:									
1980	:	90.15	119.38	65.84	185.22	210.51	262.60	279.46	94.24	68.95	16.86
1981	:	109.28	135.09	72.28	207.37	235.38	278.60	260.17	52.80	24.79	-18.43
1982	:	113.76	133.52	77.44	210.96	244.21	270.86	243.63	32.67	-.58	-27.23
1983	:	78.76	128.30	73.77	202.07	235.63	258.45	252.90	50.83	17.27	-5.55
1984	:	105.79	132.34	78.28	210.62	244.35	287.96	273.23	62.61	28.88	-14.73
:	:	:									
1985	:	117.29	136.81	61.12	197.93	232.55	277.02	252.63	54.70	20.08	-24.39
1986	:	118.46	120.41	45.19	165.60	195.37	243.12	167.60	2.00	-27.77	-75.52
1987	:	118.83	117.39	40.91	158.50	188.38	244.87	186.02	27.72	-2.36	-58.55
1988	:	83.15	122.22	40.36	162.58	193.59	262.58	216.39	53.81	22.80	-46.19

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 5/ Gross value of production less total economic costs.

Table 73--U.S. cotton production costs and returns per planted acre, 1975-88 1/, 2/

Year	Yield per planted acre <u>3/</u>	Costs					Returns			
		Cash expenses			Cash expenses plus capital replacement	Total economic costs <u>4/</u>	Gross value of production	Net returns after cash expenses and capital management <u>5/</u>	Net returns after cash expenses and capital management	Residual returns to risk and
		Variable	Fixed	Total						
		:	:	:						
		Pounds				Dollars				
1975	416.00	141.08	37.23	178.31	209.56	234.53	252.40	74.00	42.84	17.87
1976	435.00	143.71	38.26	181.97	221.56	256.64	325.79	143.82	104.23	69.15
1977	505.00	160.73	40.09	200.82	241.92	276.78	314.09	113.27	72.17	37.31
1978	390.00	159.90	37.58	197.48	232.46	276.83	262.33	64.86	29.88	-14.49
1979	502.40	189.24	40.77	230.01	272.75	328.54	366.02	136.01	93.27	37.47
1980	367.19	200.34	40.97	241.31	287.54	338.18	313.78	72.47	26.24	-24.40
1981	523.88	216.25	83.75	300.00	338.21	359.73	325.55	25.55	-12.66	-34.18
1982	550.73	235.80	88.09	323.89	366.47	393.52	354.38	30.49	-12.09	-39.14
1983	470.40	224.92	87.29	312.21	357.09	386.84	377.05	64.84	19.96	-9.79
1984	554.65	229.51	89.61	319.12	363.18	389.20	365.25	46.13	2.07	-23.95
1985	598.35	245.50	77.59	323.09	368.66	404.50	363.86	40.77	-4.80	-40.64
1986	462.97	217.84	77.96	295.80	346.15	388.08	255.68	-40.12	-90.47	-132.40
1987	683.29	250.74	69.57	320.31	371.96	458.55	489.25	168.94	117.29	30.70
1988	594.94	249.36	68.04	317.40	371.99	454.06	381.31	63.91	9.32	-72.75

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 5/ Gross value of production less total economic costs.

Table 74--U.S. flaxseed production costs and returns per planted acre, 1975-88 1/

Year	Yield per planted acre <u>2/</u>	Costs					Returns			
		Cash expenses			Cash expenses plus capital replacement	Total economic costs <u>3/</u>	Gross value of production	Net returns after cash expenses and capital management <u>4/</u>	Net returns after cash expenses and capital management	Residual returns to risk and
		Variable	Fixed	Total						
		:	:	:						
		Bushels				Dollars				
1975	9.10	17.96	16.45	34.40	44.22	56.48	59.31	24.91	15.09	2.84
1976	7.10	15.94	16.46	32.41	42.91	53.83	49.87	17.46	6.96	-3.96
1977	10.70	16.69	16.98	33.67	44.99	57.12	48.19	14.52	3.20	-8.92
1978	12.40	19.27	18.66	37.93	51.33	69.73	70.61	32.69	19.29	.88
1979	13.20	23.40	20.95	44.36	58.91	77.36	78.05	33.69	19.14	.69
1980	12.03	23.57	22.19	45.76	63.73	82.80	84.65	38.89	20.92	1.85
1981	12.09	30.46	23.95	54.41	72.35	92.92	79.63	25.22	7.28	-13.29
1982	13.21	36.80	22.34	59.14	80.05	101.02	78.10	18.96	-1.95	-22.92
1983	11.51	34.72	25.85	60.57	82.85	102.71	86.18	25.61	3.33	-16.53
1984	12.65	34.14	25.54	59.68	81.55	102.00	79.49	19.81	-2.06	-22.51
1985	13.37	34.07	21.40	55.47	77.79	98.63	82.24	26.77	4.45	-16.39
1986	16.03	29.36	18.56	47.92	70.36	91.19	64.25	16.33	-6.11	-26.94
1987	15.84	29.18	19.29	48.47	71.58	91.13	55.74	7.27	-15.84	-35.39
1988	5.88	27.79	15.71	43.50	64.38	83.75	48.20	4.70	-16.18	-35.55

1/ Sum of operator and landlord costs and returns. 2/ Weighted average of States surveyed. 3/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 4/ Gross value of production less total economic costs.

Table 75--U.S. oats production costs and returns per planted acre, 1975-88 1/, 2/

Year	Yield per planted: acre 3/	Costs					Returns			
		Cash expenses			Cash	Total economic costs 4/	Gross value of production	Net	Net returns:	Residual
		Variable	Fixed	Total	expenses			returns:	after cash:	returns
					plus			after	expenses	to risk
					capital			cash	and capital:	and
					replacement:		expenses:	replacement:	management 5/	
<hr/>										
	<u>Bushels</u>	<u>Dollars</u>								
1975	43.60	22.94	16.55	39.49	48.40	61.78	90.83	51.34	42.43	29.05
1976	40.30	20.48	17.05	37.53	47.87	60.52	91.34	53.81	43.47	30.82
1977	53.80	23.55	17.58	41.13	52.59	66.92	95.12	53.98	42.52	28.20
1978	50.10	27.80	19.64	47.44	61.49	83.78	90.17	42.72	28.67	6.38
1979	50.90	32.49	22.28	54.77	70.02	96.08	87.70	32.93	17.68	-8.38
1980	49.92	40.10	27.50	67.60	84.20	107.28	101.52	33.92	17.32	-5.76
1981	52.84	44.35	35.04	79.39	97.78	119.76	121.37	41.98	23.59	1.61
1982	55.25	47.23	30.05	77.28	99.33	130.66	103.77	26.49	4.44	-26.89
1983	48.92	43.27	31.60	74.87	97.85	124.61	94.60	19.73	-3.25	-30.01
1984	50.82	45.24	33.56	78.80	102.22	131.33	104.74	25.98	2.52	-26.59
1985	45.14	41.85	29.12	70.97	90.14	112.04	79.43	8.46	-10.71	-32.61
1986	56.78	37.19	29.79	66.98	94.43	120.27	68.94	1.96	-25.49	-51.33
1987	53.98	39.83	35.53	75.36	102.95	129.11	93.23	17.87	-9.72	-35.88
1988	35.44	41.69	37.82	79.51	99.90	127.38	122.43	42.92	22.53	-4.95

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 5/ Gross value of production less total economic costs.

Table 76--U.S. peanut production costs and returns per planted acre, 1975-88 1/

Year	Yield per planted acre 2/	Costs					Returns			
		Cash expenses			Cash expenses plus capital replacement	Total economic costs 3/	Gross value of production	Net returns after cash and capital expenses	Net returns after cash and capital expenses replacement	Residual returns to risk and management 4/
		Variable	Fixed	Total						
		:	:	:	:	:	:	:	:	:
		:	:	:	:	:	:	:	:	:
<hr/>										
	<u>Pounds</u>	<u>Dollars</u>								
1975	:2,533.00	203.11	61.88	264.99	283.84	357.59	509.28	244.30	225.45	151.70
1976	:2,445.00	199.33	61.60	260.94	282.64	357.98	503.01	242.07	220.37	145.03
1977	:2,431.00	230.51	64.49	295.00	328.74	441.54	523.33	228.33	194.59	81.79
1978	:2,602.00	246.82	68.04	314.85	349.57	468.49	561.46	246.61	211.89	92.97
1979	:2,587.00	270.03	75.31	345.34	381.42	511.79	550.47	205.13	169.05	38.68
	:									
1980	:1,526.43	287.27	73.72	360.99	400.01	517.96	376.45	15.46	-23.56	-141.51
1981	:2,647.61	306.19	147.61	453.80	497.43	534.03	721.19	267.39	223.76	187.16
1982	:2,642.50	292.32	133.93	426.25	473.13	505.20	667.41	241.16	194.28	162.21
1983	:2,350.15	291.71	136.26	427.96	477.81	498.33	580.01	152.05	102.20	81.68
1984	:2,827.78	307.29	113.47	420.76	470.28	521.36	726.46	305.70	256.18	205.10
	:									
1985	:2,771.74	295.10	100.63	395.73	438.78	490.33	638.00	242.27	199.22	147.67
1986	:2,354.78	274.11	112.97	387.08	435.50	597.65	689.78	302.70	254.28	92.13
1987	:2,305.46	295.24	95.73	390.97	439.86	617.59	655.51	264.54	215.65	37.92
1988	:2,402.36	297.61	93.59	391.20	442.71	633.30	662.65	271.45	219.94	29.35

1/ Sum of operator and landlord costs and returns. 2/ Weighted average of States surveyed. 3/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 4/ Gross value of production less total economic costs.

Table 77--U.S. rice production costs and returns per planted acre, 1975-88 ^{1/}, ^{2/}

Year	:	:	Costs				:	Returns			
	Yield	Cash expenses			Cash	:	:	Net	Net returns:	Residual	
	per	-----			expenses	Total	Gross	returns:	after cash:	returns	
	planted:	:	:	:	plus	economic:	value of	after	expenses	to risk	
	acre 3/	Variable:	Fixed:	Total:	capital	costs 4/	production:	cash	and capital:	and	
:	:	:	:	replacement:	:	:	:	expenses:	replacement:	management 5/	

:	Cwt.	Dollars									
:	:	:	:	:	:	:	:	:	:	:	
1975	: 45.54	189.25	78.21	267.46	296.50	336.77	364.59	97.13	68.09	27.82	
1976	: 46.79	185.84	77.74	263.58	290.44	323.01	314.93	51.35	24.49	-8.08	
1977	: 43.99	171.06	78.98	250.03	278.85	322.94	400.26	150.23	121.41	77.32	
1978	: 44.49	181.71	84.15	265.03	296.91	337.00	348.08	82.21	51.16	11.07	
1979	: 45.70	201.64	92.30	293.94	331.02	396.30	460.07	166.14	129.06	63.78	
:	:	:	:	:	:	:	:	:	:	:	
1980	: 43.24	234.46	100.36	334.82	374.99	429.29	462.37	127.55	87.40	33.08	
1981	: 47.75	258.27	97.11	355.38	398.32	460.86	487.67	132.29	89.35	26.81	
1982	: 46.86	272.55	91.59	364.14	409.41	435.99	356.65	-7.49	-52.76	-79.34	
1983	: 45.53	268.39	82.93	351.32	399.26	443.42	400.12	48.80	.86	-43.30	
1984	: 48.87	255.20	89.95	345.15	394.86	438.80	393.22	48.07	-1.64	-45.58	
:	:	:	:	:	:	:	:	:	:	:	
1985	: 53.78	271.41	91.69	363.10	430.71	472.21	430.71	67.61	16.17	-41.50	
1986	: 56.97	287.21	67.11	354.32	395.01	421.36	218.41	-135.91	-176.60	-202.95	
1987	: 54.67	285.19	58.35	343.54	387.81	434.06	263.89	-79.65	-123.92	-170.17	
1988	: 54.61	296.09	57.09	353.18	399.52	475.14	370.33	17.15	-29.19	-104.81	

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 5/ Gross value of production less total economic costs.

Table 78--U.S. grain sorghum production costs and returns per planted acre, 1975-88 ^{1/}, ^{2/}

	:	:	Costs				:	Returns			
Year	:	Yield	Cash expenses			Cash	:	:	Net	Net returns:	Residual
	:	per	-----			expenses	:	Total	Gross	returns:	after cash:
	:	planted:	:	:	:	plus	:	economic	value of	after	expenses
	:	acre 3/	Variable:	Fixed:	Total:	capital	:	costs 4/	production:	cash	and capital:
:	:	:	:	:	replacement:	:	:	:	expenses:	replacement:	management 5/

	:	<u>Busheles</u>	<u>Dollars</u>								
1975	:	45.80	41.07	22.57	63.64	77.73	100.25	108.91	45.26	31.17	8.66
1976	:	46.00	36.78	22.50	59.28	76.54	96.95	93.69	34.41	17.15	-3.26
1977	:	54.10	40.49	23.31	63.80	81.71	104.13	98.79	34.99	17.08	-5.34
1978	:	53.20	43.02	24.66	67.68	86.26	110.67	152.12	84.44	65.86	41.46
1979	:	61.40	51.42	27.20	78.62	101.23	135.78	144.15	65.54	42.93	8.38
	:										
1980	:	43.16	58.26	30.22	88.48	114.15	145.27	131.17	42.69	17.02	14.10
1981	:	62.95	67.44	40.94	108.38	135.64	162.82	141.50	33.12	5.86	-21.32
1982	:	57.64	69.16	37.75	106.91	130.78	154.74	121.36	14.45	-9.42	-33.38
1983	:	46.29	66.76	36.23	102.99	129.73	157.00	131.58	28.59	1.85	-25.42
1984	:	52.81	64.40	35.96	100.36	124.29	149.08	123.73	23.37	-5.56	-25.35
	:										
1985	:	65.89	62.61	26.89	89.50	112.06	147.98	124.99	35.49	12.93	-22.99
1986	:	66.91	55.50	25.39	80.89	103.93	133.66	91.57	10.68	-12.36	-42.09
1987	:	68.62	55.70	26.47	82.17	105.30	136.54	96.18	14.01	-9.12	-40.36
1988	:	62.13	56.88	31.92	88.80	112.71	155.05	148.43	59.63	35.72	-6.62

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 5/ Gross value of production less total economic costs.

Table 79--U.S. soybean production costs and returns per planted acre, 1975-88 1/

Year	Yield per planted: acre 2/	Costs					Returns			
		Cash expenses			Cash			Net	Net returns:	Residual
		expenses			expenses	Total	Gross	returns:	after cash:	returns
		Variable:	Fixed:	Total:	plus	economic:	value of	after	expenses	to risk
		3/	4/	capital	costs	3/	production:	cash	and capital:	and
				replacement:				expenses:	replacement:	management 4/
	Busheles	Dollars								
1975	28.30	38.23	30.50	68.73	82.15	118.80	139.93	71.19	57.77	21.12
1976	25.20	34.88	30.60	65.48	80.66	127.95	172.46	106.98	91.80	44.51
1977	30.20	41.23	31.36	72.58	88.86	140.55	178.46	105.87	89.59	37.90
1978	29.20	44.81	33.57	78.39	94.82	153.78	195.43	117.05	100.62	41.66
1979	31.90	50.58	36.72	87.30	105.92	166.27	201.32	114.03	95.41	35.05
1980	25.86	56.38	43.48	99.86	119.23	179.89	199.71	99.85	80.48	19.82
1981	29.68	62.52	46.42	108.94	129.53	178.79	179.48	70.54	49.95	.69
1982	31.32	61.38	46.51	107.89	131.05	172.02	160.64	52.75	29.59	-11.38
1983	25.72	59.61	54.18	113.79	138.29	183.81	204.46	90.67	66.17	20.65
1984	27.54	60.71	56.57	117.28	141.45	174.97	166.72	49.44	25.27	-8.25
1985	34.17	56.68	40.02	96.70	126.30	170.07	165.96	69.26	39.66	-4.11
1986	32.94	49.08	39.49	88.57	120.05	161.21	150.64	62.07	30.59	-10.57
1987	33.83	51.04	43.77	94.81	126.65	170.01	171.66	76.85	45.01	1.65
1988	26.60	54.17	45.84	100.01	134.02	185.86	200.25	100.24	66.23	14.39

1/ Sum of operator and landlord costs and returns. 2/ Weighted average of States surveyed. 3/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 4/ Gross value of production less total economic costs.

Table 80--U.S. sugar-beet production costs and returns per planted acre, 1981-88 1/

Year	Yield per planted acre 2/	Costs					Returns			
		Cash expenses			Cash expenses plus capital replacement	Total economic costs 3/	Gross value of production	Net returns after cash expenses and capital expenses 4/	Net returns after cash expenses and capital expenses 4/	Residual returns to risk management
		Variable	Fixed	Total						
		:	:	:	:	:	:	:	:	:
<hr/>										
	Tons	Dollars								
1981	21.99	316.44	171.13	487.57	538.48	580.76	649.30	161.73	110.82	68.54
1982	19.83	307.76	128.10	435.86	489.47	593.42	704.96	269.10	215.49	111.54
1983	19.41	313.54	126.91	440.45	497.20	605.39	721.33	280.88	224.13	115.94
1984	19.68	286.28	135.85	422.13	480.32	575.57	668.02	245.89	187.69	92.45
1985	19.91	286.81	132.32	419.14	479.21	574.93	675.01	255.87	195.80	100.08
1986	20.39	274.22	136.44	410.66	470.59	574.85	731.88	321.22	261.29	157.03
1987	22.30	274.84	148.74	423.58	484.03	592.08	852.81	429.23	368.78	260.73
1988	19.19	378.16	149.09	527.25	593.84	734.86	787.98	260.73	194.14	53.12

1/ Sum of operator and landlord costs and returns. 2/ Weighted average of States surveyed. 3/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 4/ Gross value of production less total economic costs.

Table 83--U.S. wheat production costs and returns per planted acre, 1975-88 1/, 2/

Year	Yield per planted acre 3/	Costs					Returns			
		Cash expenses	Variable	Fixed	Total	Cash expenses plus capital replacement	Gross value of production 4/	Net returns after cash expenses and capital expenses	Net returns after cash expenses and capital expenses	Residual returns to risk and management 5/
1975	28.50	32.59	20.69	53.28	63.74	84.81	104.39	51.10	40.64	19.58
1976	27.10	30.82	20.99	51.81	63.54	78.95	77.46	25.65	13.92	-1.49
1977	27.70	28.83	21.62	50.45	62.94	76.82	67.88	17.43	4.94	-8.94
1978	29.90	30.19	23.31	53.50	68.14	102.21	91.84	38.34	23.70	-10.37
1979	32.40	37.01	25.97	62.97	79.84	113.33	124.86	61.89	45.02	11.53
1980	29.87	46.76	28.99	75.75	93.90	122.25	116.48	40.73	22.58	-5.77
1981	31.47	55.29	34.59	89.88	109.18	132.85	118.96	29.08	9.78	-13.89
1982	32.64	56.03	32.46	88.49	107.90	132.25	114.69	26.20	6.79	-17.56
1983	36.89	56.77	37.60	94.37	115.39	140.78	132.97	38.60	17.58	-7.81
1984	33.79	54.61	39.46	94.07	114.55	134.36	118.45	24.38	3.90	-15.91
1985	31.41	51.10	25.23	76.33	95.96	125.26	96.00	19.67	.04	-29.26
1986	28.79	45.67	21.69	67.36	87.26	112.18	68.12	.76	-19.14	-44.06
1987	31.87	44.30	24.21	68.51	88.84	115.00	78.39	9.88	-10.45	-36.61
1988	27.38	46.63	24.54	71.17	91.74	125.80	99.37	28.20	7.63	-26.43

1/ Excludes direct effects of Government programs on costs and returns. 2/ Sum of operator and landlord costs and returns. 3/ Weighted average of States surveyed. 4/ Economic costs are cash expenses less interest paid plus capital replacement and allocated returns to operating capital, nonland capital, land, and unpaid labor. 5/ Gross value of production less total economic costs.

Appendix table 1--Indexes of prices paid by farmers, 1985-88

Index	1985	1986	1987	1988
<u>1977 = 100</u>				
Prices paid by farmers for commodities and services, interest, taxes, and wage rates	162	159	161	170
Production items	151	144	147	157
Feed	116	108	103	128
Feeder livestock	154	153	179	192
Seed	153	148	148	150
Fertilizer	135	124	118	130
Agricultural chemicals	128	127	124	126
Fuels and energy	201	162	161	163
Farm and motor supplies	146	144	145	148
Autos and trucks	193	198	208	215
Tractors and self-propelled machinery	178	174	174	181
Other machinery	183	182	185	197
Building and fencing	136	136	137	138
Farm services and cash rent	150	145	146	147
Interest	228	211	190	186
Taxes	136	138	139	142
Wage rates	154	160	167	172
Production items, interest, taxes, and wage rates	156	150	151	160
<u>Percent</u>				
Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and wage rates	79	77	78	81

Source: Agricultural Prices, 1988 Summary.

Appendix table 2--Prices, loan levels, and participation rates for
Government commodity programs, 1986-88

Year/item	Barley	Corn	Oats	Grain sorghum	Soybeans	All wheat	Rice	Upland cotton	Peanuts
	<u>Dollars per bushel</u>				<u>Dollars per cwt</u>		<u>Cents per pound</u>		
1986:									
Harvest-month price	1.47	1.41	0.86	1.37	4.57	2.29	3.83	48.0 ^{1/}	29.0
Season-average price	1.61	1.50	1.21	1.37	4.78	2.42	3.75	52.4	29.2
Target price	2.60	3.03	1.60	2.88	None	4.38	11.90	81.0	None
Loan level	1.56	1.92	.99	1.82	4.77	2.40	7.20	55.0	30.4
	<u>Percent of base acreage</u>								
Participation rate	72	86	38	74	N/A	85	94	92	N/A
	<u>Dollars per bushel</u>				<u>Dollars per cwt</u>		<u>Cents per pound</u>		
1987:									
Harvest-month price	1.69	1.57	1.30	1.40	5.07	2.39	4.83	65.0 ^{1/}	28.0
Season-average price	1.81	1.94	1.56	1.70	5.88	2.57	7.27	64.3	27.7
Target price	2.60	3.03	1.60	2.88	None	4.38	11.66	79.0	None
Loan level	1.49	1.82	.94	1.74	4.77	2.28	6.84	52.0	30.4
	<u>Percent of base acreage</u>								
Participation rate	85	90	45	85	N/A	88	96	92	N/A
	<u>Dollars per bushel</u>				<u>Dollars per cwt</u>		<u>Cents per pound</u>		
1988:									
Harvest-month price	2.88	2.60	2.66	2.39	7.53	3.50	6.78	54.0 ^{1/}	27.0
Season-average price	2.85	2.60	2.65	2.32	7.70	3.70	6.50	56.4	27.0
Target price	2.51	2.93	1.55	2.78	None	4.23	11.15	76.0	None
Loan level	1.44	1.77	.90	1.68	4.77	2.21	6.63	52.0	30.4
	<u>Percent of base acreage</u>								
Participation rate	78	87	30	81	N/A	85	92	88	N/A

^{1/} All cotton.

N/A = Not applicable.

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